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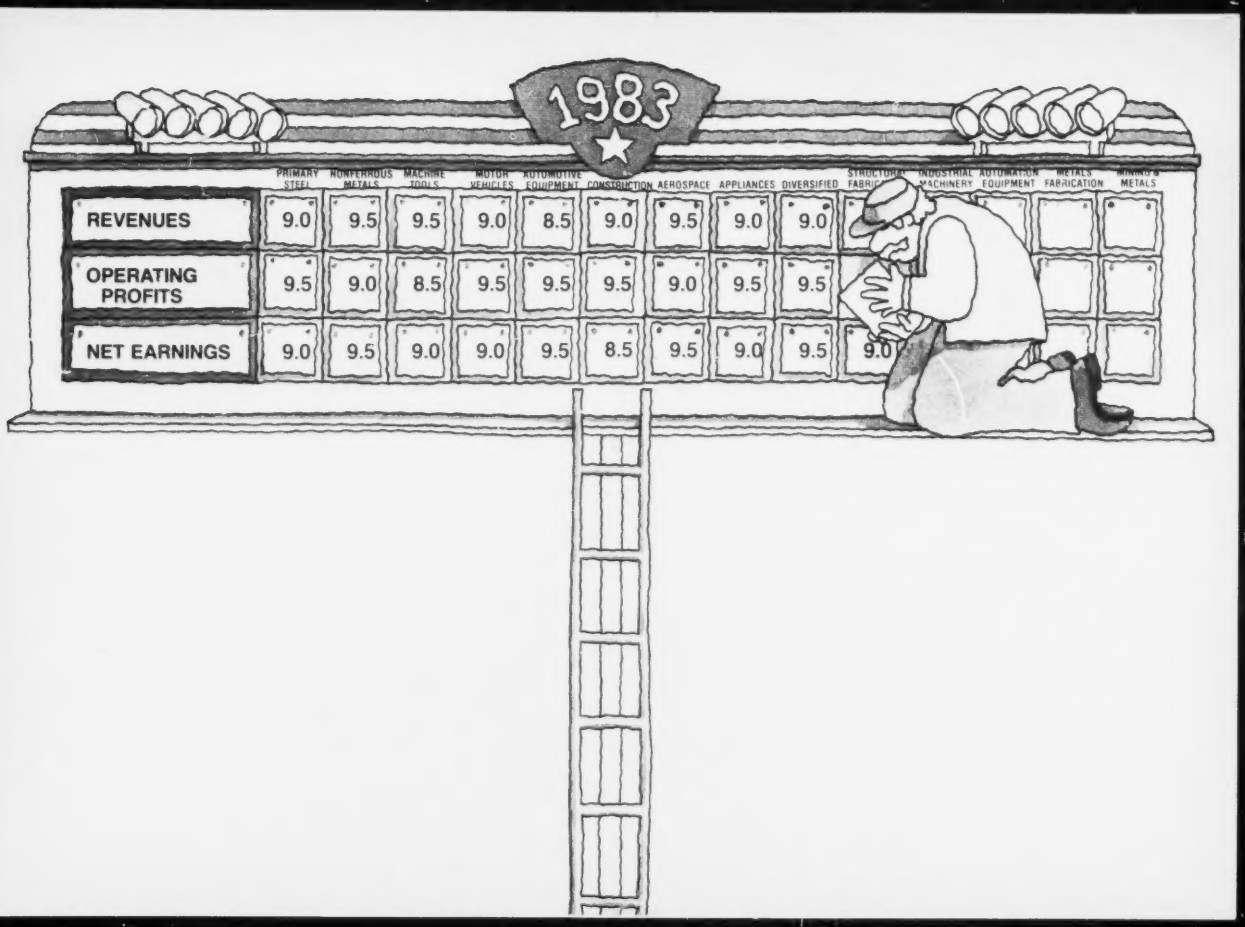
IRON AGE METALS PRODUCER



FIRST ANNUAL FINANCIAL SCOREBOARD: METALWORKING'S FAST-GROWTH COMPANIES

LED FROM POWDER

'S INDUSTRIAL HEART AND SOUL

NT SPOTLIGHT

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IRON AGE
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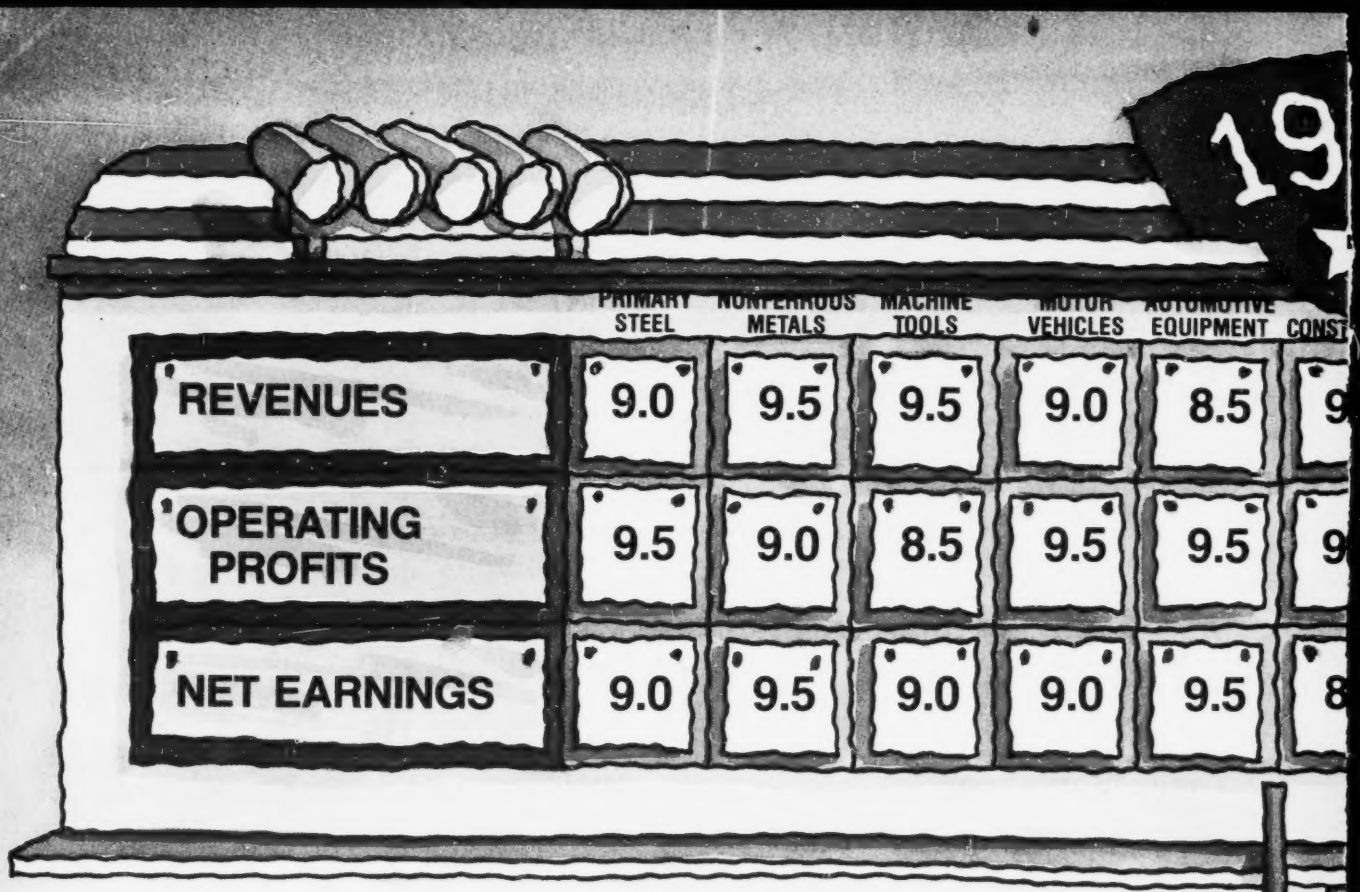

IRON AGE'S

FIRST ANNUAL FINANCIAL SCOREBOARD

JOHN D. BAXTER

An analysis of the scoreboard data is that well-managed companies in any industry—can grow with the capital and the other resources available to them. This is why stereotype theories on the likely demise of sunset industries are off base.

Iron Age has brought together the U.S. metalworking family for a group portrait.

It is a financial portrait, to be sure, but it reveals much more than just financial facts about about one of the nation's most important industry groups.

The tabulated results give important insights into management effectiveness at individual companies. Too, the results draw a graphic picture of the ravages of sluggish economic times and special problems of the last 5 years.

The data shows that many companies in so-called 'smokestack' industries have displayed considerable strength in the face of much public fretting about mature, 'fading' industries.

Simply, the sun is not setting on all companies in 'sunset' industries—even when measured against the worst of times.

Some 275 companies in 14 different industry groupings are displayed in the *Iron Age* Financial Scoreboard.

Collectively, these companies account for a great share of all manufacturing done in this country. Their products range from state-of-the-art products for the military and the aerospace sectors to mundane metal products used in every home in America.

The *Iron Age* scoreboard is thought to be the only published corporate tabulation that brings together exclusively all of this country's top metals producing and metalworking corporations. It is now planned as an annual feature and the table that follows will be the first of an annual presentation.

The inclusion in the scoreboard of the industry category of Automation Equipment, Factory and Office, may surprise some readers. But many traditional metalworking industry boundries have faded in recent years. For example, a traditional machine tool can be simply listed as such, or, when numerical controls are added, can be listed as automation equipment.

Also, major users of automated equipment, both in the factory and the office, include, in important measure, metals producing and metalworking industries.

It is worth noting, too, that the automation equipment industry itself is a consumer, and a growing one, of many metals and metalworking products.

Focal Points

As noted on the table, companies in each of 14 industry groups, are listed according to their return on invested capital over their five most recent fiscal years. This measure is used because it best offers a full and fair comparison of individual corporate performances.

Return on invested capital shows how much a company earned on both its stockholders' equity and its long-term debt. Thus, it measures how well corporate leaders managed the major

financial resources at their disposal. And the 5-year span tends to smooth out cyclical bounces and one-time transactions that can greatly color data over periods of less span.

So, the scoreboard gives both the latest fiscal-year showing of some 275 companies and the five-year record of progress measured against use of stockholders' equity and long-term debt.

In most part, allowing for small differences in individual company fiscal years, the five-year period of this scoreboard measures a period of sluggish business activity for U.S. industry. Two of the years were recession years and two others were of substandard economic growth. The overall U.S. economic growth rate (real GNP) for the five-year period was 2.2 pct. That compares with a U.S. long-term growth rate of 3.5 pct.

In view of the sluggishness of the period measured, some of the returns on capital that were scored by metalworking companies are remarkable. They blow away critics who singularly see basic industries in the U. S. in "a slide to oblivion," as one academician says.

The many companies shown with small, or negative, returns on capital over the past five years, of course, reflect the very sluggish times. To a probable lesser degree, those many corporate financial laggards reflect secular restructuring going on in many U. S. industries.

But a major point that emerges from an analysis of the scoreboard data is that well-managed companies in any industry can grow—and grow strongly—with the capital and other resources available to them. This is why stereotype theories on the likely demise of 'sunset' industries are off base.

Returns on invested capital over five years among leaders in each industry group, range from a high of 24.1 pct—for Schlumberger Ltd in the automation equipment industry group— to 6.1 pct—for John Deere Co. in the farm and construction equipment group.

In view of the fact that the listing represents a cross-section of the industries hardest-hit in the five-year period, this showing is almost certainly stronger than might be popularly expected.

Still, a full reading of the scoreboard reflects the havoc done in a roller-coaster—mostly downslide—span of years. It reflects damage done by super-high interest rates in many capital-intensive industries. And it reflects the damage done—especially to basic manufacturing industries—by tidal-wave imports in recent years.

The industries listed here have been in the dead-center of this storm of sluggish national economic growth, runaway interest rates and intense foreign competition over the last five years.

Of course, a five-year return on invested capital, as important an indicator of corporate financial health as it is, does not tell a full story on any company or industry.

Some companies, for example, are shown with high returns on invested capital but a poor record of operating profits. That state, for one, might indicate non-recurring earnings may have been large over the years. Such earnings could be, or could not be, beyond management's scope of control.

Often times, too, a company may have a strategic plan underway to correct a corporate weakness, or to bolster a special strength. In such a case, some financial measures of corporate success may not show up well. Corporate sacrifices, by strategic design, are made at the cost of a favorable showing in a traditionally important measure of corporate financial success.

The *Iron Age* scoreboard, like all compilations of corporate data, must bear the warning, "Use with caution." It tells a lot, but not everything.

Riding the Storm

No matter how the table is read, there are still some surprises.

Everybody—but everybody—in industry knows, for example, that the steel and machine tool industries have been especially battered in recent years. Yet, at the top of the steel industry list is a company that had a return on invested capital of almost 15 pct over the past five hectic years. That is Nucor Corp.

The leading position of Nucor has a lot to do with the structure of the steel industry and where the company fits in. It is a leading minimill and has escaped many of the problems besetting large, integrated producers.

But still, it is widely known that Nucor has alert, aggressive management. And that is an element that appears in all the leaders on the table.

Too, who would guess that in the machine tool industry over the past rocky years there would be a company with a five-year return on invested capital of 15.8 pct?

That is the record of Monarch Machine Co.

Did Monarch pull off this record because it is a small, limited product-line company?

Perhaps not. Cross & Trecker is an industry giant and it had a five-year return on investment of 15.7 pct—just about the same as for small Monarch.

Both these companies have good reputations for management.

Certainly, John Deere Co.'s reputation for efficient production and product quality helped give it a 6.1 pct five-year return on investment. That, in an industry that has been rocked as about as hard as any.

Some of the highest returns on investment over the past five years were scored in the diversified metalworking industry category shown on the table. Not only were returns high but a relatively great number of companies scored high returns.

There is food for thought for metalworking companies of more restricted diversity. Perhaps there is more efficient utilization of financial resources in diversified companies. In such companies, the lion's share of capital resources tends to flow to the best money-making divisions. Overall, then, diversified companies—as shown on the table—can often get superior returns on their invested capital.

But, in the foggy-bottom world of accounting, as much is often not told in corporate data as is told. There are companies with poor financial showings on the table here that are well-managed. These companies will likely show up near the head of their industry listings in the *Iron Age* 1989 financial scoreboard.

Certainly, it has to be hoped—and rationally expected—that the record over the next five years will be better for all metals producing and metalworking companies listed on the *Iron Age* table. U. S. industry can't take many more five-year periods like the one just past. □

PRIMARY STEEL

Companies ranked in order of five year average annual return on invested capital

	1983 (Dollars in thousands per company fiscal years)						Five Year Growth, Pct (Average annual growth over five latest fiscal years)					
Company	Revenues	Pct. Change From 1982	Operating Profits	Pct. Change From 1982	Net Earnings	Pct. Change From 1982	Revenues	Operating Profits	Net Earnings	Return on Invested Capital	Return on Equity	Return on Sales
Nucor Corp.	542,531	11.6	19,706	1.6	27,864	25.6	13.2	(7.7)	7.3	14.7	18.8	7.1
Carpenter Tech.	397,451	(18.5)	9,192	(78.0)	16,042	(51.6)	2.1	(18.7)	(9.4)	12.2	14.0	7.0
Eastmet Corp.	155,579	(28.0)	(15,844)	(11.3)	(10,231)	(20.7)	0.4	—	—	7.3	(3.1)	(0.9)
Florida Steel	235,108	(5.4)	(4,838)	21.5	(4,677)	43.8	7.7	(11.5)	2.1	6.7	9.2	2.6
Northwestern St.	*167,690	(48.1)	(43,098)	—	(19,162)	(35.2)	(10.1)	(42.6)	(34.1)	5.8	4.4	0.8
Copperweld Corp.	*325,475	(12.6)	(15,023)	—	(22,013)	—	(1.5)	(21.7)	(12.3)	4.5	5.5	1.1
Athlone Inds.	234,107	(3.5)	8,167	20.3	(493)	—	0.7	(7.8)	—	4.3	9.9	1.9
LTV Corp.	*4,577,800	(4.2)	(212,800)	19.7	(180,700)	(16.7)	13.9	(7.5)	(6.5)	3.5	9.9	0.8
Cyclops	1,024,114	17.3	1,941	—	(2,190)	81.6	6.3	(48.0)	29.0	2.6	1.6	0.6
Lukens Inc.	342,855	(12.0)	(2,942)	53.2	(14,012)	—	3.3	8.3	—	1.6	1.2	0.5
Wheeling/Pitts.	831,260	7.2	(34,427)	49.6	(54,080)	8.0	(4.6)	21.1	42.0	1.2	0.2	(0.8)
U.S. Steel	17,523,000	(7.3)	2,763,000	(5.3)	(1,161,000)	—	10.7	41.9	(37.3)	0.5	(1.2)	1.1
Laclede Steel	*190,149	6.7	5,853	—	5,048	—	(0.7)	—	—	(0.0)	(0.4)	(0.1)
Inland Steel	3,046,200	12.8	(26,335)	84.2	(116,900)	1.6	71.8	—	(61.4)	(0.3)	(0.7)	(1.9)
Republic Steel	2,701,107	(1.4)	(121,551)	36.7	(326,494)	(36.5)	(13.5)	(20.9)	(7.7)	(2.1)	(4.8)	(2.4)
Armco	4,164,600	(23.3)	(347,800)	36.0	(672,500)	(94.9)	1.1	(34.0)	(56.8)	(3.0)	(6.2)	(1.7)
Sharon Steel	820,815	*18.5	23,452	—	(68,785)	34.9	13.3	(56.5)	(17.3)	(4.5)	(56.2)	(2.0)
National Intgr.	2,992,703	(1.7)	(16,608)	(93.1)	(154,318)	66.7	(3.4)	(88.7)	—	(4.8)	(8.6)	(2.6)
Keystone	*330,738	(6.0)	(7,707)	29.9	(21,284)	(58.6)	(1.2)	—	—	(5.2)	(8.0)	(2.1)
Bethlehem	4,898,200	(6.9)	(270,400)	45.7	(163,500)	88.9	(3.3)	(34.6)	—	(9.7)	(21.7)	(4.5)
Kaiser Steel•	226,984	(42.0)	(17,278)	—	(422,770)	—	(33.6)	(93.7)	—	—	—	(89.8)

NONFERROUS METALS

Companies ranked in order of five year average annual return on invested capital

	1983 (Dollars in thousands per company fiscal years)						Five Year Growth, Pct (Average annual growth over five latest fiscal years)					
Company	Revenues	Pct. Change From 1982	Operating Profits	Pct. Change From 1982	Net Earnings	Pct. Change From 1982	Revenues	Operating Profits	Net Earnings	Return on Invested Capital	Return on Equity	Return on Sales
Phibro-Salom	*29,757,000	11.4	2,271,000	8.8	470,000	39.5	29.5	41.1	54.8	19.8	26.6	1.9
Newmont Mining	720,912	6.8	(2,571)	(16.5)	52,901	9.0	3.3	(3.6)	89.3	19.3	16.1	2.1
Freeport-McMoran	786,151	5.1	142,832	9.4	93,472	41.7	22.4	32.8	37.2	14.1	20.0	17.3
Cabot Corp	1,558,016	(1.9)	121,721	(31.8)	64,162	(27.1)	21.7	13.3	18.6	12.3	17.8	6.8
Martin Marietta	3,899,258	10.6	6,995	(91.4)	141,331	54.2	17.6	(32.7)	8.6	11.8	18.0	5.6
Brush Wellman	*245,415	26.6	37,053	29.2	25,697	—	15.0	13.7	28.7	11.5	14.4	9.4
Alcan Alum.	4,969,000	14.2	110,000	—	73,000	—	38.1	18.0	24.7	10.6	10.7	5.4
Fluor Corp.	*5,300,452	(21.4)	1,761	(98.9)	27,700	(81.9)	21.5	48.3	(1.1)	10.5	13.1	2.3
Cominco Ltd.	#1,374,723	11.3	186,861	32.6	(39,325)	(26.1)	10.3	(10.3)	(8.4)	7.7	10.4	5.5
Alcoa	5,263,400	13.2	390,700	—	174,200	—	5.8	—	—	7.3	10.2	5.8

NONFERROUS METALS

Companies ranked in order of five year average annual return on invested capital

	1983 (Dollars in thousands per company fiscal years)						Five Year Growth, Pct (Average annual growth over five latest fiscal years)					
Company	Revenues	Pct. Change From 1982	Operating Profits	Pct. Change From 1982	Net Earnings	Pct. Change From 1982	Revenues	Operating Profits	Net Earnings	Return on Invested Capital	Return on Equity	Return on Sales
Asarco	1,512,236	12.0	36,145	—	58,329	—	7.3	83.6	53.4	7.1	8.8	6.0
Olin Chems.	1,934,600	6.1	9,452	—	71,700	34.5	4.7	—	25.3	5.9	8.2	3.4
Kaiser Alum	*3,013,700	(8.2)	2,100	(98.6)	(74,900)	34.7	2.6	(33.1)	(26.3)	3.6	6.2	15.5
Reynolds	*3,340,800	11.6	(75,800)	—	(99,100)	—	4.2	—	—	3.5	5.5	2.5
Amax Corp.	2,290,100	(5.2)	137,300	28.8	(489,000)	(25.4)	8.8	3.0	(37.6)	3.1	4.8	(1.5)
Phelps-Dodge	977,400	2.0	(47,000)	40.7	(63,500)	14.5	1.6	(27.6)	6.7	1.6	2.5	1.1
Inco Ltd.	1,173,421	(5.1)	(312,784)	(13.9)	(234,894)	(15.5)	(7.2)	51.9	(50.0)	(5.3)	(10.8)	(8.4)

MACHINE TOOLS

Companies ranked in order of five year average annual return on invested capital

	1983 (Dollars in thousands per company fiscal years)						Five Year Growth, Pct (Average annual growth over five latest fiscal years)					
Company	Revenues	Pct. Change From 1982	Operating Profits	Pct. Change From 1982	Net Earnings	Pct. Change From 1982	Revenues	Operating Profits	Net Earnings	Return on Invested Capital	Return on Equity	Return on Sales
Monarch Machine	*60,659	(36.3)	1,435	(88.1)	509	(92.6)	(0.8)	(7.4)	(0.5)	15.8	15.8	8.1
Cross & Trecker	149,925	(60.6)	(10,903)	—	3,687	(90.5)	(1.4)	(66.2)[a]	1.6	15.7	16.8	7.7
Acme-Cleveland	172,739	(47.2)	(20,469)	—	31,993	—	1.7	(29.4)	36.3	12.6	17.4	6.9
Ex-Cell-O Corp.	953,803	(7.1)	29,308	(5.4)	49,815	3.3	6.5	0.0	6.3	11.4	13.1	5.1
Clausing Corp.	74,812	(8.2)	6,731	(25.8)	4,193	(6.7)	16.5	14.4	16.4	10.8	15.1	5.7
Cinci. Milacron	560,199	(26.4)	(42,138)	—	(10,279)	—	0.7	(70.3)	(36.0)	9.4	12.7	4.7
Gleason Works	163,509	(8.5)	(16,328)	33.9	(7,671)	17.5	(1.9)	—	(45.9)	4.8	5.4	1.9
Brown & Sharpe	131,466	(8.6)	(11,093)	52.4	(1,011)	92.5	1.0	—	(31.7)	2.5	3.1	1.0
Lodge & Shipley	15,394	(47.2)	(4,480)	—	(2,360)	—	(4.5)	(7.0)	(24.6)	1.5	1.8	(1.5)

MOTOR VEHICLES

Companies ranked in order of five year average annual return on invested capital

	1983 (Dollars in thousands per company fiscal years)						Five Year Growth, Pct (Average annual growth over five latest fiscal years)					
Company	Revenues	Pct. Change From 1982	Operating Profits	Pct. Change From 1982	Net Earnings	Pct. Change From 1982	Revenues	Operating Profits	Net Earnings	Return on Invested Capital	Return on Equity	Return on Sales
Gen. Motors	74,581,600	24.2	8,058,300	—	3,730,200	—	4.9	15.2	84.7	6.4	7.2	2.0
Ford Motor	44,454,600	19.9	3,475,800	—	1,866,900	—	1.4	78.1	38.9	(0.9)	(1.5)	(0.4)
Chrysler	*13,240,400	31.8	1,424,500	—	700,900	—	2.2	32.5	5.8	(11.6)	(96.5)	(5.5)
AMC	*3,271,720	36.7	(102,328)	41.3	(146,730)	4.6	6.2	(27.7)	(30.4)	(14.7)	(39.6)	(1.8)

AUTOMOTIVE EQUIPMENT & PARTS

Companies ranked in order of five year average annual return on invested capital

	1983 (Dollars in thousands per company fiscal years)						Five Year Growth, Pct (Average annual growth over five latest fiscal years)					
Company	Revenues	Pct. Change From 1982	Operating Profits	Pct. Change From 1982	Net Earnings	Pct. Change From 1982	Revenues	Operating Profits	Net Earnings	Return on Invested Capital	Return on Equity	Return on Sales
Simpson Inds.	*92,308	(27.3)	(4,331)	—	317	(94.3)	(3.8)	4.9	(10.5)	10.5	12.5	3.6
Hoover Universal	776,900	32.5	48,287	—	32,400	—	8.5	36.2	10.2	9.7	13.9	3.8
Eaton	*2,674,125	9.0	186,003	—	93,311	—	(0.1)	6.0	(43.5)	9.1	4.4	1.4
Echlin Inc.	564,497	15.1	43,624	13.7	30,732	15.8	15.9	27.2	25.9	8.4	10.8	4.9
Dana	2,874,118	17.8	172,138	—	112,803	—	5.8	20.2	12.9	8.1	10.8	4.0
Barnes Group	*442,137	7.4	21,918	92.1	(2,599)	5.2	5.9	—	(35.5)	6.4	7.4	2.5
Arvin Inds.	600,605	16.9	17,441	—	18,338	68.8	4.8	24.6	9.1	5.4	7.8	2.7
Allen Group	352,437	11.8	9,952	—	6,164	—	3.7	27.0	(15.8)	3.5	3.0	1.2
Sheller-Globe	608,451	21.3	17,956	58.7	16,612	17.8	4.2	—	(92.5)	3.1	4.9	1.4
Fruehauf Corp.	2,129,375	15.0	114,758	—	8,382	—	0.2	60.6	(39.3)	2.6	4.5	1.0
A.O. Smith	853,372	22.9	3,997	—	13,628	—	2.2	—[a]	17.0	1.9	2.1	0.5
Hayes-Albion	141,824	(7.9)	(9,719)	45.5	(10,846)	(63.9)	(7.2)	—	—	(15.6)	(10.2)	3.2

FARM & CONSTRUCTION MACHINERY

Companies ranked in order of five year average annual return on invested capital

	1983 (Dollars in thousands per company fiscal years)						Five Year Growth, Pct (Average annual growth over five latest fiscal years)					
Company	Revenues	Pct. Change From 1982	Operating Profits	Pct. Change From 1982	Net Earnings	Pct. Change From 1982	Revenues	Operating Profits	Net Earnings	Return on Invested Capital	Return on Equity	Return on Sales
Deere	4,017,481	(14.0)	61,696	(56.7)	23,285	(56.0)	0.2	(18.9)	(26.8)	6.1	8.0	3.3
Caterpillar	5,424,000	(16.2)	(310,000)	(22.5)	(345,000)	(91.7)	(4.1)	(31.6)	(43.7)	5.5	4.8	2.0
American Hoist	319,774	(31.5)	(28,182)	(94.9)	(44,215)	—	(4.6)	(36.5)	(53.9)	2.2	(2.8)	(1.4)
Hesston	197,962	(22.1)	21,249	(37.8)	2,028	(74.5)	0.3	49.4	—	1.0	1.1	0.4
Clark Equip.	862,247	(15.5)	(36,492)	44.9	12,414	—	(9.6)	(77.1)	—	(0.0)	(0.5)	(0.4)
Bucyrus-Erie	551,533	(19.8)	(14,508)	—	(133,003)	—	2.8	(14.3)	—	(1.8)	(1.9)	1.2
Massey-Ferg.	1,535,000	(25.4)	28,700	—	(68,000)	83.5	(9.0)	(50.8)	—	(15.8)	(57.9)	(7.6)
Barber-Greene	115,745	(26.1)	(17,356)	—	(34,948)	—	(8.0)	—	—	(20.6)	(23.6)	(4.6)
IH	*3,569,621	(16.5)	(263,859)	50.4	(485,285)	72.1	(9.8)	50.1	(76.4)	(22.6)	—	(11.8)

AEROSPACE

Companies ranked in order of five year average annual return on invested capital

	1983 (Dollars in thousands per company fiscal years)						Five Year Growth, Pct (Average annual growth over five latest fiscal years)					
Company	Revenues	Pct. Change From 1982	Operating Profits	Pct. Change From 1982	Net Earnings	Pct. Change From 1982	Revenues	Operating Profits	Net Earnings	Return on Invested Capital	Return on Equity	Return on Sales
Gulfstream	586,312	0.7	107,312	7.3	53,134	23.6	28.7	34.2	67.9	18.3	35.0	5.9
Boeing	11,129,000	23.2	(5,000)	95.0	355,000	21.6	16.8	7.2	7.5	17.4	18.6	4.8
General Dyn.	*7,146,000	16.1	329,100	—	286,600	—	20.0	—	—	16.6	17.1	3.7
United Aircraft	28,887	8.1	4,996	9.2	3,231	6.7	13.8	44.5	23.4	15.9	15.9	10.0

AEROSPACE

Companies ranked in order of five year average annual return on invested capital

	1983 (Dollars in thousands per company fiscal years)						Five Year Growth, Pct (Average annual growth over five latest fiscal years)					
Company	Revenues	Pct. Change From 1982	Operating Profits	Pct. Change From 1982	Net Earnings	Pct. Change From 1982	Revenues	Operating Profits	Net Earnings	Return on Invested Capital	Return on Equity	Return on Sales
Curtis-Wright	189,281	(2.2)	17,060	(2.2)	18,503	(11.1)	2.3	9.7	27.6	14.5	17.4	18.0
Rockwell	8,097,900	9.5	345,300	30.4	389,100	17.3	8.9	5.5	18.0	14.1	16.4	4.4
Fairchild	895,788	(18.8)	56,680	(26.4)	28,405	(19.4)	10.3	2.0	10.9	12.4	15.8	4.6
Northrop	3,260,600	31.9	30,700	—	100,700	—	13.5	(25.9)	—	12.3	13.5	3.3
McDonnell D.	8,292,800	11.3	535,300	23.7	274,900	28.0	14.6	10.1	13.6	11.4	12.0	2.9
United Tech	14,669,265	8.0	1,514,661	9.9	509,173	(4.6)	19.8	14.0	5.7	10.9	14.1	3.5
Gates Lrjet	*350,507	(36.1)	9,279	(81.4)	449	(96.9)	8.9	(9.5)	(5.0)	10.4	13.5	3.0
Rohr Inds.	569,134	0.6	66,708	29.6	24,125	30.5	17.4	69.6	—	8.9	14.7	3.1
Grumman.	2,254,778	9.6	161,823	(7.6)	110,746	—	10.4	31.3	64.1	7.7	10.8	4.8
Cessna Air.	524,395	(36.9)	(65,311)	—	(18,845)	—	(4.5)	—	(33.7)	6.5	8.7	2.4
Aeronca	*43,852	(0.7)	3,987	(0.3)	3,795	—	0.7	(56.1)	—	4.0	8.4	3.3
Lockheed	6,490,300	(15.6)	415,200	15.3	262,800	26.8	9.4	—[a]	—	2.9	(20.4)	0.9

APPLIANCES

Companies ranked in order of five year average annual return on invested capital

	1983 (Dollars in thousands per company fiscal years)						Five Year Growth, Pct (Average annual growth over five latest fiscal years)					
Company	Revenues	Pct. Change From 1982	Operating Profits	Pct. Change From 1982	Net Earnings	Pct. Change From 1982	Revenues	Operating Profits	Net Earnings	Return on Invested Capital	Return on Equity	Return on Sales
Maytag	598,287	35.4	96,536	89.7	60,691	63.6	13.7	15.2	14.0	19.6[a]	21.3	10.0
Whirlpool	2,667,682	17.5	222,494	59.0	167,038	20.2	5.8	9.5	11.5	14.8	17.1	5.4
Magic Chef	754,399	13.7	27,903	—	25,443	—	19.4	—	88.0	6.4	10.3	1.9
Roper Corp.	*481,143	12.1	24,432	55.2	11,452	—	2.5	—	11.5	5.7	9.1	1.9
Rangaire	*87,031	(9.6)	(2,451)	—	2,818	—	3.4	—	10.3	5.0	7.3	2.2
Fedders[a]	80,780	(6.0)	3,986	—	18,466	—	(2.1)	—	—	—[a]	(94.0)	(22.6)

DIVERSIFIED METALWORKING

Companies ranked in order of five year average annual return on invested capital

	1983 (Dollars in thousands per company fiscal years)						Five Year Growth, Pct (Average annual growth over five latest fiscal years)					
Company	Revenues	Pct. Change From 1982	Operating Profits	Pct. Change From 1982	Net Earnings	Pct. Change From 1982	Revenues	Operating Profits	Net Earnings	Return on Invested Capital	Return on Equity	Return on Sales
Unit. Ind.	288,271	12.1	21,839	18.0	16,739	20.2	18.2	19.9	21.4	19.0	19.9	5.4
Emerson Elec.	*3,475,709	(0.8)	433,303	(3.5)	302,927	0.9	7.9	(1.2)	10.3	17.0	19.0	8.1
Core Ind.	130,016	(16.5)	13,952	(31.6)	7,371	(26.9)	2.1	(3.5)	1.9	14.8	15.8	7.3
Trin. Ind.	477,017	(31.4)	10,941	(80.4)	16,501	(57.7)	21.6	27.3	28.8	14.4	20.3	4.9

DIVERSIFIED METALWORKING

Companies ranked in order of five year average annual return on invested capital

	1983 (Dollars in thousands per company fiscal years)						Five Year Growth, Pct (Average annual growth over five latest fiscal years)					
Company	Revenues	Pct. Change From 1982	Operating Profits	Pct. Change From 1982	Net Earnings	Pct. Change From 1982	Revenues	Operating Profits	Net Earnings	Return on Invested Capital	Return on Equity	Return on Sales
Vulcan	820,519	14.1	9,490	(49.6)	54,182	(0.9)	5.1	14.5	3.0	13.5	16.9	8.4
Emhart	1,685,600	(1.4)	144,800	2.0	84,300	5.1	5.0	1.5	4.6	13.2	15.3	4.2
Worth. Ind. U.S.	449,571	2.7	32,901	1.8	19,870	3.7	20.5	4.0	14.4	12.7	21.5	5.2
Gen. Signal	1,574,948	(2.9)	112,637	(21.0)	89,698	(16.8)	4.4	(0.7)	9.6	12.7	14.1	6.5
Sealed Pow.	424,622	(16.0)	40,742	40.7	29,050	27.2	12.1	26.5	27.1	12.5	14.4	6.8
Lear Sieg.	1,464,190	(1.6)	127,527	7.3	64,122	(11.3)	5.0	7.5	6.9	12.4	17.6	4.7
Whittaker	1,602,825	(4.2)	102,669	(16.7)	37,609	(35.9)	13.4	21.2	8.0	12.1	17.6	3.6
Sundstrand	909,318	(5.4)	29	(50.3)	44,240	(36.2)	6.9	(4.2)	2.3	12.1	16.5	7.5
Cooper Ind.	1,850,280	(22.7)	168,911	(40.9)	71,169	(47.3)	13.5	8.7	27.3	11.7	14.3	7.1
Northwest	*1,608,100	(19.2)	7,900	—	(80,400)	—	2.7	(33.0)	(17.1)	11.3	17.4	7.5
Borg-Warner	3,559,500	10.7	271,700	31.0	182,600	9.1	10.1	6.4	9.5	11.0	12.8	5.1
Morrison-Knud.	2,165,987	(8.3)	50,868	(11.1)	41,512	5.7	21.0	12.6	14.6	10.8	13.9	1.8
TRW	5,557,591	6.9	238,700	2.7	205,160	4.5	8.0	(3.0)	3.8	10.7	14.9	4.0
Fed. Mogul	746,984	1.6	39,885	6.7	41,068	44.5	6.2	(4.5)	5.5	10.0	14.2	5.0
Duriron	124,878	(7.5)	1,642	(73.5)	3,020	(38.6)	7.5	5.4	19.6	9.9	12.0	5.5
KDI Corp.	*201,512	6.6	12,421	74.3	6,797	43.8	3.1	13.3	6.1	9.9	23.8	2.8
Westinghouse	9,532,600	(2.2)	477,800	(8.8)	449,000	(0.1)	7.2	14.6	—	9.6	11.1	3.5
Ceco Corp.	465,178	3.2	13,423	27.4	11,750	9.2	6.7	11.3	5.9	9.6	10.8	3.0
Harsco Corp.	839,085	(14.3)	4,550	—	27,586	(23.6)	1.5	(34.6)	(6.7)	9.4	12.3	4.5
Signal Co.	*6,265,000	62.2	166,000	(59.2)	103,000	(8.8)	13.8	26.8	(3.1)	8.9	10.8	4.8
Katy Ind.	402,554	13.0	26,083	(6.9)	13,045	(5.6)	16.4	13.4	6.7	8.5	12.3	6.0
Ogden Corp.	*1,743,039	(3.7)	328,635	7.8	52,977	(9.4)	(0.5)	(0.4)	0.6	8.4	13.9	3.1
Park-Ohio Ind.	142,030	(19.6)	(7,570)	—	(5,530)	—	(1.0)	(41.8)	(29.1)	8.3	10.4	4.3
Textron Inc.	2,979,800	1.5	88,800	15.2	88,700	5.1	0.8	20.0	(2.3)	8.1	9.8	3.7
Timken Co.	937,320	(7.6)	(69,436)	15.3	530	—	(1.9)	(27.8)	6.0	7.5	7.7	4.4
Figgie Int. Hold.	680,583	(6.8)	32,829	(20.5)	21,355	(18.0)	1.7	2.4	7.7	7.5	13.0	3.0
Eagle-Picher	532,653	0.2	10,156	(14.5)	15,368	34.7	0.9	(21.4)	(7.4)	6.9	23.1	3.4
Franklin Elec.	168,495	22.1	3,284	—	5,524	—	5.5	73.5	98.0	6.0	8.0	2.6
Interlake Inc.	835,041	8.8	21,372	—	22,834	—	(0.8)	23.2	—	5.5	7.6	2.6
AMF Inc.	970,579	(7.9)	7,500	(87.4)	(1,494)	—	3.5	(17.1)	(33.4)	5.4	7.0	3.2
Allegheny I.	2,347,858	(17.3)	83,126	(38.0)	28,305	(40.1)	32.3	20.7	15.0	5.1	8.6	4.2
Salem Corp.	*55,064	(38.1)	(5,623)	—	(2,172)	—	1.8	(43.5)	(53.5)	3.7	3.9	0.8
Koppers	*1,565,670	(1.2)	89,677	12.7	30,588	—	0.4	(6.6)	(4.9)	3.1	5.5	5.5
Dravo Corp.	*823,010	(24.9)	(41,769)	(44.1)	(14,363)	—	(0.8)	—	(75.8)	2.4	3.8	0.8
Valley Ind.	*156,088	(11.1)	(13,343)	4.5	(6,495)	2.9	6.4	43.6	28.0	2.4	3.2	1.0
Chromalloy	*867,867	(7.4)	186,818	11.1	(42,223)	(0.4)	2.7	17.1	—	0.0	(1.0)	0.1
Condec Corp.	*250,954	(6.5)	(13,903)	—	2,180	—	1.8	—	(43.1)	(0.7)	(1.7)	(0.5)
NFV Corp.	999,737	23.3	26,521	—	(53,784)	41.8	13.32	(39.7)	(88.3)	(10.7)	(16.5)	5.9

METALS FABRICATION & METAL PARTS

Companies ranked in order of five year average annual return on invested capital

	1983 (Dollars in thousands per company fiscal years)						Five Year Growth, Pct (Average annual growth over five latest fiscal years)					
Company	Revenues	Pct. Change From 1982	Operating Profits	Pct. Change From 1982	Net Earnings	Pct. Change From 1982	Revenues	Operating Profits	Net Earnings	Return on Invested Capital	Return on Equity	Return on Sales
Keystone I.	*110,489	(15.1)	CNC	CNC	12,589	(26.0)	6.6	(8.4)[a]	6.9	21.5	21.8	13.6
Raytheon	5,937,264	7.1	388,861	(0.2)	300,147	(5.8)	13.5	55.0	17.0	19.7	20.9	5.5
Snap-on-Tools	*454,748	5.6	95,290	14.4	42,974	15.2	8.3	10.4	7.0	17.2	19.5	9.7
Teledyne	2,979,000	4.1	182,600	(24.3)	304,600	2.7	4.4	(6.6)	6.9	16.2	20.9	11.9
Wyman-Gordon	383,466	(18.9)	57,253	(38.3)	46,692	(17.2)	3.3	14.9	19.0	15.3	17.3	8.7
Ill. Tool Wks.	497,821	11.4	44,117	11.8	49,588	23.7	7.9	2.0	8.4	15.2	15.5	10.0
Baldor Elec.	148,661	(0.9)	8,161	(20.2)	7,756	(8.9)	4.7	(9.7)	(1.0)	13.3	0.6	6.3
Sargent Inds.	98,355	5.2	13,683	4.8	7,742	8.6	85.8[a]	76.7[a]	—	12.9	25.8	9.8
Cameron Iron	955,864	16.7	66,184	(74.6)	3,335	(97.8)	17.2	13.0	7.9	12.3	17.3	9.5
Kennametal	270,693	(30.6)	41,248	(66.4)	(11,204)	—	7.4	(0.7)	(19.0)	11.8	13.0	7.3
Stanadyne	374,662	9.2	51,810	63.5	22,052	58.6	2.5	17.1	17.3	11.7	13.9	4.8
Vermont Amer.	191,444	5.3	14,080	—	14,100	—	29.2	55.1	24.0	11.7	13.7	5.7
Commercial Met.	857,152	(20.4)	6,825	(35.8)	8,087	(15.1)	8.0	(22.6)	24.3	11.3	12.8	1.1
Hi-Shear Ind.	*70,847	(29.0)	3,274	(74.7)	9,437	—	11.5	(20.4)	(12.8)	10.9	10.2	5.9
New Hamp. Ball	55,224	(9.0)	9,081	(22.6)	4,072	(13.5)	14.2	17.9	13.9	10.8	14.4	7.2
Jamesbury	83,880	(22.1)	989	(91.0)	1,328	(73.6)	7.3	4.4	(10.2)	10.4	14.5	5.6
Masco	1,059,450	23.8	138,930	30.1	106,560	15.6	13.1	7.8	12.3	10.4	17.7	10.2
Precision Casts	86,639	(6.4)	6,128	(38.2)	4,836	1.2	19.0	22.3	28.0	10.4	17.2	4.7
Commercial Shear	168,710	(15.4)	38,445	(36.6)	3,337	(54.0)	(3.5)	(91.7)	(24.1)	10.2	22.8	4.9
Regal-Beloit	43,894	17.2	3,145	—	2,510	71.4	12.0	17.8	15.2	10.1	14.7	6.1
Black & Deck.	*1,167,752	0.6	39,808	9.0	44,151	—	7.9	(2.6)	(48.8)	10.0	6.9	3.6
Axia	221,932	9.1	9,261	—	4,836	12.8	0.3	—	(3.1)	9.9	12.4	5.2
SPS Tech	*212,092	(9.7)	7,461	22.5	3,532	—	4.3	15.9	—	9.5	12.6	4.4
NL Inds.	*1,390,100	(35.0)	(143,175)	—	(107,402)	—	1.3	(39.6)	(5.8)	8.8	16.8	9.5
Fleetwood	858,025	47.6	45,996	—	29,740	—	10.2	—	—	7.9	7.9	1.4
Stewart-Warner	265,120	(5.7)	2,027	(71.4)	5,293	(23.7)	(4.1)	(37.5)	(21.7)	7.8	8.0	4.1
Easco	*492,620	15.7	10,674	(35.9)	9,376	(12.8)	10.1	1.2	28.6	6.7	11.0	2.2
Moog	167,091	6.4	18,565	1.4	963	(86.1)	17.2	14.7	3.8	6.4	12.1	4.7
Champion Home	274,693	8.2	1,859	52.3	4,847	(30.6)	2.5	39.9	—	5.8	4.7	0.6
Scovill	742,572	7.4	41,909	(7.0)	27,379	37.3	0.0	(4.0)	87.5	5.7	9.4	2.6
Outboard Marine	788,501	1.3	(41,370)	16.6	39,266	15.5	2.6	2.9	—	5.6	6.6	3.1
Anadite	43,634	(30.2)	(5,438)	—	964	—	1.9	(50.9)	—	5.5	31.4	2.0
Quanex Corp.	297,369	(14.7)	(1,630)	(97.2)	3,514	(89.8)	13.1	8.5	(35.6)	5.4	4.2	1.7
Bundy	155,944	3.0	CNC	CNC	3,071	(8.8)	5.0	46.5[a]	—	5.0	6.9	2.7
Elco Inds.	71,783	(6.1)	13	(98.5)	1,232	(19.7)	1.5	(47.4)	(12.1)	4.8	6.7	4.8
Chicago Rivet	26,549	6.0	289	—	805	—	(5.2)	—	—	4.3	2.8	2.3
Nortek	331,321	68.3	19,508	—	7,200	38.5	36.6	—	30.9	3.9	8.0	2.6
Fischer & Porter	165,193	(9.5)	15,546	(6.7)	583	(19.1)	2.6	47.8	15.7	0.7	1.2	0.3
National Stand.	230,045	(7.0)	(9,402)	57.7	(955)	91.7	(3.9)	(76.2)	—	0.5	0.7	0.2
Toro	240,966	18.3	1,476	1.1	572	—	6.8	(49.3)	(44.5)	0.1	(0.5)	(0.6)
Chicago Pn	*360,956	(3.2)	8,007	—	(15,507)	(29.2)	(0.2)	65.4	(87.7)	(0.2)	(0.2)	0.0
Coachmen I.	*478,742	80.4	41,095	—	23,388	—	20.5	—	—	(0.2)	(0.2)	(0.7)

METALS FABRICATION & METAL PARTS

Companies ranked in order of five year average annual return on invested capital

	1983 (Dollars in thousands per company fiscal years)						Five Year Growth, Pct (Average annual growth over five latest fiscal years)					
Company	Revenues	Pct. Change From 1982	Operating Profits	Pct. Change From 1982	Net Earnings	Pct. Change From 1982	Revenues	Operating Profits	Net Earnings	Return on Invested Capital	Return on Equity	Return on Sales
GF Bus. Equip.	*136,330	(15.7)	(5,196)	(71.6)	(2,101)	(64.9)	(1.8)	(70.6)	14.3	(0.2)	(0.6)	(0.2)
Acme-Precision	*26,652	—	529	—	155	67.8	—	55.7	28.3	(1.8)	(1.3)	5.0
Amcast Ind.	174,529	30.2	2,414	—	5,322	—	6.2	59.3	—	(1.9)	(3.5)	(0.9)
RB&W	*137,894	21.0	4,357	—	1,765	—	2.4	—	(73.2)	(2.6)	(9.2)	(1.3)
Lamson & Sess	*99,554	(1.4)	(11,270)	37.5	(44,061)	—	6.3	(94.3)	(67.3)	(27.6)	—	(15.8)

GENERAL INDUSTRIAL MACHINERY

Companies ranked in order of five year average annual return on invested capital

	1983 (Dollars in thousands per company fiscal years)						Five Year Growth, Pct (Average annual growth over five latest fiscal years)					
Company	Revenues	Pct. Change From 1982	Operating Profits	Pct. Change From 1982	Net Earnings	Pct. Change From 1982	Revenues	Operating Profits	Net Earnings	Return on Invested Capital	Return on Equity	Return on Sales
Briggs & Stratton	613,807	(3.4)	38,596	(27.3)	31,762	(19.3)	7.6	5.8	5.3	16.5	16.5	6.1
Newcor	71,131	3.9	4,940	(27.8)	2,845	(24.8)	10.7	11.4	12.2	15.7	19.1	4.7
Gorman-Rupp	66,453	9.7	8,097	36.9	5,426	26.4	4.3	1.0	3.5	15.6	15.6	8.5
Goulds Pump	275,344	(1.6)	16,573	(40.7)	14,404	(28.3)	6.6	(14.7)	(0.1)	15.1	19.7	7.4
Combustion	3,091,936	(13.4)	(59,023)	—	(20,375)	—	6.8	(36.2)	(4.2)	12.7	15.3	(9.8)
Zurn Inds.	382,193	(5.8)	25,927	(18.3)	19,873	(7.6)	8.1	7.4	13.9	12.0	16.0	4.9
Amsted	490,166	(20.7)	(12,142)	—	(3,800)	—	(5.2)	(46.4)	(35.1)	11.6	7.5	4.7
Joy Mfg.	*627,960	(37.4)	25,719	(82.6)	2,923	(96.5)	2.7	89.1	(3.1)	10.4	12.1	6.3
Parker-Hannifin	1,038,289	(9.6)	27,353	(60.7)	29,487	(48.9)	9.0	(10.7)	(1.8)	10.1	13.8	5.0
FMC Corp.	3,498,162	(0.0)	149,149	(18.9)	168,784	10.8	5.6	(13.0)	6.7	9.6	11.7	4.6
Oilgear	29,022	(14.6)	365	(78.1)	1,066	(36.4)	3.3	(10.5)	(3.0)	9.2	9.8	5.7
Foster Wheeler	1,540,853	(5.3)	45,357	(29.2)	44,213	(22.7)	1.0	(1.8)	3.0	8.7	18.0	3.4
Twin Discs	90,394	(58.3)	11,928	—	(3,624)	—	(3.9)	(24.3)	(27.9)	7.7	9.5	3.2
Prab Robot	*19,104	(1.9)	(177)	—	(56)	—	24.0	(34.9)[a]	55.5	7.5	9.3	2.4
Pa. Eng.	139,683	(20.1)	CNC	CNC	5,531	(32.2)	5.1	CNC	6.5	7.3	13.4	3.8
White Con	2,080,491	3.8	78,188	60.9	51,783	63.0	5.0	2.8	7.4	7.1	10.7	2.7
Rexnord	*804,513	(14.1)	(2,893)	—	3,927	(45.1)	(0.8)	(49.4)	(30.6)	5.7	7.7	2.8
Ing. Rand	2,274,075	(18.0)	(35,604)	—	(112,166)	—	0.8	(35.6)	(73.3)	5.2	7.2	2.8
Colt Ind.	1,576,183	4.3	132,989	34.7	99,255	—	(1.8)	7.8	(11.6)	5.0	21.0	6.6
ACF Ind.	583,789	(26.2)	83,953	(42.3)	1,846	(94.4)	(5.3)	(9.4)	(21.8)	4.7	9.3	3.7
Portec	112,109	(29.0)	(7,276)	—	(3,818)	—	(7.6)	(64.1)	(95.0)	4.6	6.2	1.4
GATX	869,000	(11.8)	(200)	—	(93,100)	—	(2.1)	(15.0)	73.1	4.4	4.8	2.7
Cummins Eng.	1,604,723	1.1	(3,952)	94.0	5,160	(33.0)	2.0	69.5	—	4.3	6.7	1.8
Crane Co.	*771,679	1.1	25,595	—	(109,060)	—	(8.6)	(49.1)	—	(0.6)	(1.1)	0.3
Wean United	121,296	(32.2)	(26,710)	9.7	(24,567)	—	(5.6)	—	—	(8.8)	(18.2)	(4.8)
Allis Ch.	*1,300,327	(19.2)	(54,676)	57.4	(133,232)	35.6	(5.0)	(78.9)	—	(8.9)	(15.8)	(3.6)
Harnischfg.	324,121	(28.4)	(36,610)	13.5	(34,630)	54.8	(5.4)	2.0	96.5	(10.5)	(14.1)	(4.5)
Selas Corp.	22,483	(52.0)	(2,379)	38.1	(2,114)	—	(13.1)	(78.7)	—	(16.8)	(17.9)	(2.9)
Fared Robot[b]	9,942	—	(2,798)	—	(2,978)	—	—	—	—	(62.6)	—	—

HEAVY STRUCTURAL FABRICATION

Companies ranked in order of five year average annual return on invested capital

	1983 (Dollars in thousands per company fiscal years)						Five Year Growth, Pct (Average annual growth over five latest fiscal years)					
Company	Revenues	Pct. Change From 1982	Operating Profits	Pct. Change From 1982	Net Earnings	Pct. Change From 1982	Revenues	Operating Profits	Net Earnings	Return on Invested Capital	Return on Equity	Return on Sales
Todd Shipyards	788,181	10.1	90,563	(2.5)	30,170	(4.8)	26.1	36.5	—	19.3	33.7	3.8
CBI Inds.	828,173	(31.6)	(21,426)	—	44,110	(50.0)	13.4	7.1	4.1	17.1	17.7	7.5
Am. Shipbldg.	84,211	33.7	(9,456)	—	(9,595)	—	(6.4)	—[a]	7.8	11.4	8.1	1.8
McDermott	*3,707,767	(23.4)	179,077	(56.4)	55,664	(69.7)	33.5	18.8	14.4	6.6	9.4	2.6
Ampco-Pitts.	*244,415	(22.4)	(5,019)	—	(1,686)	69.1	21.1	(43.3)	(1.4)	4.1	7.0	(12.2)
Richmond Tank	22,330	(76.3)	CNC	CNC	(33,756)	—	(2.1)	36.4[a]	(66.1)	(12.2)	(8.8)	30.6

MINING & METALS PROCESSING

Companies ranked in order of five year average annual return on invested capital

	1983 (Dollars in thousands per company fiscal years)						Five Year Growth, Pct (Average annual growth over five latest fiscal years)					
Company	Revenues	Pct. Change From 1982	Operating Profits	Pct. Change From 1982	Net Earnings	Pct. Change From 1982	Revenues	Operating Profits	Net Earnings	Return on Invested Capital	Return on Equity	Return on Sales
Homestake	247,922	32.0	35,498	—	40,036	—	12.9	—[a]	36.7	18.6	17.8	18.9
Englehard	2,099,337	4.0	67,740	42.7	73,519	13.4	19.6	9.3[a]	12.5	15.4	17.1	2.9
Handy & Harm.	575,900	15.4	24,476	17.4	10,610	27.0	6.6	6.6	11.0	9.6	14.7	2.8
Cleveland Cl.	310,666	15.5	(34,076)	13.2	2,757	—	4.4	(23.7)	(9.7)	6.3	6.5	5.6
Hanna Mining	153,636	7.3	(4,233)	62.8	(28,837)	64.1	(10.0)	(75.9)	15.9	1.0	1.0	(7.0)

AUTOMATION EQUIPMENT, FACTORY & OFFICE

Companies ranked in order of five year average annual return on invested capital

	1983 (Dollars in thousands per company fiscal years)						Five Year Growth, Pct (Average annual growth over five latest fiscal years)					
Company	Revenues	Pct. Change From 1982	Operating Profits	Pct. Change From 1982	Net Earnings	Pct. Change From 1982	Revenues	Operating Profits	Net Earnings	Return on Invested Capital	Return on Equity	Return on Sales
Schlumberg.	5,513,246	(8.5)	877,585	(36.8)	1,084,299	(19.6)	17.4	10.6	19.3	24.1	26.5	20.6
Computervis.	*400,032	23.0	65,835	10.8	35,340	9.1	56.6	52.4	55.2	19.7	21.9	11.1
IBM	*40,180,000	16.9	6,227,000	19.6	5,485,000	24.4	13.8	12.6	12.5	18.9	21.3	13.0
Intergraph	*252,014	61.9	102,805	75.6	29,342	—	66.4	—[a]	86.2	18.2	25.2	9.1
Litton	4,719,206	(4.5)	311,807	(29.0)	231,560	(26.5)	5.5	10.9	81.5	17.6	19.7	5.8
3M	7,039,000	6.6	733,000	6.9	667,000	5.7	8.7	(1.0)	3.6	17.6	19.4	10.4
Rolm	502,642	32.1	72,865	13.1	35,543	19.2	62.2	58.8	70.6	17.5	24.7	8.4
GE	26,797,000	1.1	2,549,000	6.0	2,024,000	11.4	6.6	5.5	10.5	16.5	18.3	6.6
Auto. Switch	160,207	1.5	25,343	(4.4)	17,166	2.5	8.3	4.0	4.5	15.8	15.8	11.7
Genl. Instr.	974,317	1.8	141,810	21.4	102,181	13.5	14.5	38.6	33.6	14.6	16.6	4.5
E-Systems	826,819	9.6	71,728	33.3	55,246	54.4	19.8	—	41.4	14.5	16.6	4.7
Square D	*1,144,137	8.2	88,335	(10.3)	62,911	(12.3)	10.0	(3.0)	0.9	14.5	18.4	7.7
Ametek	448,152	5.6	53,717	13.7	37,753	38.5	7.3	2.9	15.2	13.7	18.8	6.4
Sanders Assoc.	578,128	32.5	33,766	10.0	39,046	47.8	33.5	24.5	17.1	13.7	16.1	7.0
H-P	*4,710,000	12.4	1,801,000	14.5	432,000	12.8	22.3	22.5	23.3	13.6	13.8	8.8

AUTOMATION EQUIPMENT, FACTORY & OFFICE

Companies ranked in order of five year average annual return on invested capital

	1983 (Dollars in thousands per company fiscal years)						Five Year Growth, Pct (Average annual growth over five latest fiscal years)					
Company	Revenues	Pct. Change From 1982	Operating Profits	Pct. Change From 1982	Net Earnings	Pct. Change From 1982	Revenues	Operating Profits	Net Earnings	Return on Invested Capital	Return on Equity	Return on Sales
Cognitronics	13,603	15.9	1,746	33.9	895	—	19.5	—	80.9	13.0	13.3	6.1
Esterline	201,748	(2.8)	11,353	(33.5)	7,685	(27.8)	4.4	(0.7)	11.7	12.6	18.0	6.3
Perkin-Elmer	1,015,402	(2.1)	316,442	(7.1)	50,242	(19.9)	13.0	12.1	14.0	12.3	14.5	6.2
Wang	1,538,000	32.7	224,700	33.3	152,000	41.9	51.4	48.8	58.9	12.0	20.6	9.3
NCR	3,730,951	5.8	488,949	21.1	287,665	22.7	7.5	10.0	9.4	11.5	13.6	7.2
Digital	4,271,854	10.1	632,106	(19.2)	283,622	(32.0)	24.7	18.5	18.5	11.4	13.0	9.7
Gerber Sci.	117,247	2.2	15,132	27.8	4,517	33.9	36.2	52.0	39.4	11.1	19.6	6.5
Harris	*1,423,653	9.4	(14,278)	—	55,900	(26.0)	14.6	(24.2)	2.8	11.1	15.2	7.3
Paradyne	*208,959	0.8	(16,123)	—	3,652	(86.4)	44.9	(19.8)	40.5	10.9	11.8	12.2
Motorola	4,328,000	14.3	333,000	28.1	244,000	37.1	13.2	6.4	13.3	10.6	13.3	5.4
Ransburg	*131,278	(1.1)	(1,097)	—	756	(87.2)	19.1	(31.5)	(15.7)	10.5	11.8	6.6
Datapoint	540,192	6.2	169,438	6.2	8,077	—	28.1	50.3	56.8	10.4	11.6	6.8
Honeywell	4,864,800	5.9	29,600	(12.7)	231,200	(15.3)	11.6	—	4.3	10.0	12.8	6.2
Foxboro	533,102	(11.7)	31,620	(62.9)	7,977	(77.1)	6.8	(5.7)	(12.0)	9.4	10.1	5.5
Control Data	3,507,900	6.3	415,200	24.1	161,700	4.3	13.9	31.1	13.7	9.2	10.0	5.1
North Am Prec.	*3,799,825	19.9	128,236	43.4	95,712	30.1	5.9	5.3	10.3	8.7	12.1	3.2
CTS	*306,153	19.1	1,558	89.5	9,145	(2.4)	13.3	5.6	(0.7)	8.6	8.8	4.5
Sperry	5,076,000	(8.9)	1,283,700	(16.2)	118,100	(46.8)	7.2	27.9	(2.5)	8.6	11.0	4.6
Genrad	*226,611	20.5	48,688	63.7	19,630	—	21.0	25.7	—	8.6	10.5	5.3
Gould	*1,324,800	5.8	139,700	(3.17)	64,100	(30.9)	15.4	—	(7.2)	7.9	11.1	8.7
Mohawk Data	*363,624	8.9	11,150	(27.8)	12,045	(23.0)	19.6	16.0	3.4	7.9	13.9	5.4
ITT	14,155,408	(7.1)	957,210	4.3	674,510	1.8	(1.1)	10.1	17.1	7.5	10.0	3.8
Data General	828,904	2.9	65,389	(6.3)	23,135	(6.2)	17.5	(14.7)	(6.3)	7.2	9.8	6.2
Coherent	*91,303	13.6	9,939	—	4,042	—	23.8	30.8	—	6.8	7.7	2.8
Research-Cott.	*386,155	(14.0)	(11,045)	—	2,701	(79.4)	10.0	6.6	(1.3)	6.8	7.9	1.9
Conrac	*141,136	21.4	10,685	0.2	6,985	(13.4)	7.9	6.0	75.5	6.3	8.9	3.9
Gulton	*151,180	(2.9)	6,242	—	3,942	—	7.2	—	31.2	6.1	8.8	2.4
Kysor Ind.	118,731	22.6	4,296	—	2,664	—	4.2	77.4	—	5.8	8.7	3.2
Burroughs	4,296,500	4.9	167,700	—	196,900	67.4	12.4	—	15.1	5.6	7.9	5.2
Compudyne	79,643	(7.2)	4,294	(23.4)	761	(31.2)	12.5	26.5	16.7	5.5	15.6	1.8
McGraw-Ed.	*2,093,700	(7.4)	73,800	(26.1)	33,400	(42.6)	33.8	33.4	(5.8)	5.3	10.7	3.1
GTE	*12,943,918	10.0	721,089	(13.3)	955,604	14.6	10.9	(1.9)	11.9	5.0	11.0	6.7
Mark Controls	268,902	(1.1)	471	(69.1)	4,094	61.8	6.3	(12.3)	13.1	4.5	8.0	1.9
Compucorp	*38,258	8.4	(1,061)	—	(4,566)	—	62.0	60.9	—	(4.7)	(90.8)	(1.9)
Modular Comp	*74,947	(19.2)	(3,175)	—	(23,804)	—	3.8	—	—	(6.5)	(6.3)	(3.5)
Apollo Comp.[b]	80,659	—	22,267	—	13,127	—	—	—	—	(9.0)	(9.0)	(23.3)
Automatix[c]	13,011	61.5	(451)	—	(2,056)	—	—	36.4	—	(16.9)	(20.6)	—

SOURCES: Company annual reports and 10-K's; and Moody's Manuals #Canadian dollars [a] All averages for less than five years [b] Founded in 1981 [c] Founded in 1980
FOOTNOTES: Revenues include all income except interest income
Operating Profits equal Revenues minus the sum of: Cost of Sales, Depreciation, and Selling, Administrative and General Expenses
Return on Invested Capital equals Net Earnings divided by the sum of Shareholders' Equity and Long-term Debt
Return on Equity equals Net Earnings divided by Shareholders' Equity
Return on Sales equals Net Earnings divided by Revenues
*Discrepancies in figures from one source to another —Percent over 99.9%
N/A Information not available CNC Could not calculate due to missing or conflicting info.

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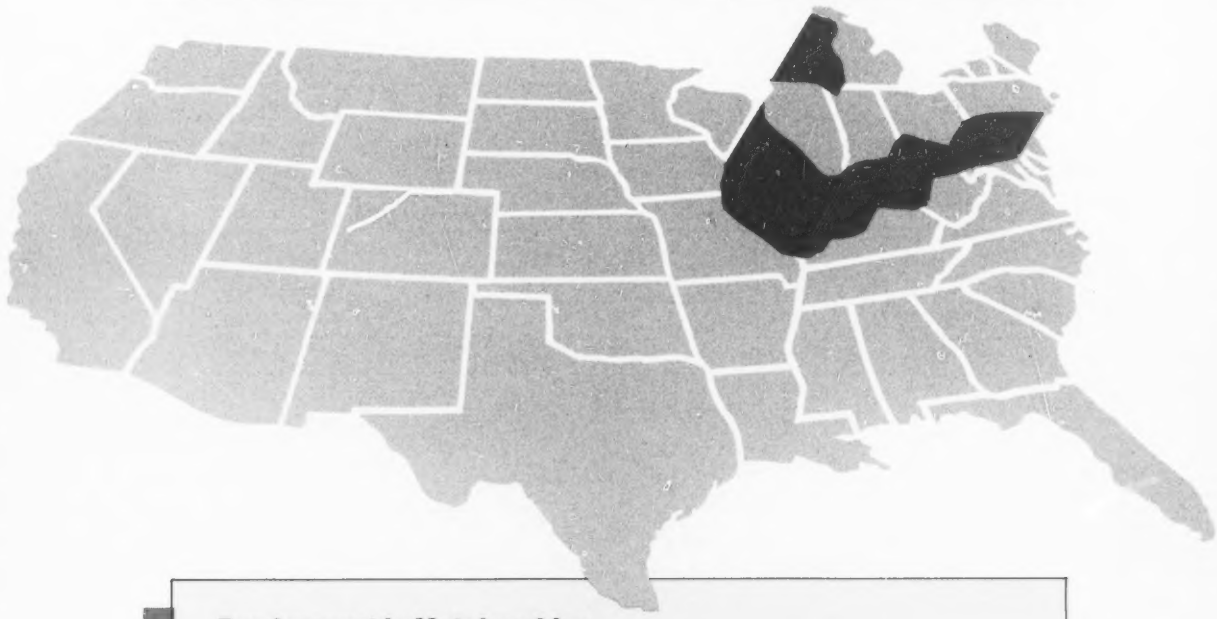
A CLOSEUP LOOK AT

AMERICA'S INDUSTRIAL HEART AND SOUL



Employment In Metalworking
In Thousands Ave. Employment For Year In SIC's 33-37

	Industrial Heartland					
	Illinois	Indiana	Michigan	Ohio	Penna.	Totals
1979	697.0	474.5	853.5	839.4	677.8	3,542.2
1983	471.6	347.0	620.5	610.3	478.8	2,528.2
Total Decrease						**-28.6%**

A leading "think tank" has reached several startling conclusions about the region and has proposed some dramatic courses of action.

BY EDWIN BOWERS

America's industrial heartland—Wisconsin, Illinois, Michigan, Indiana, Ohio and Western Pennsylvania—is at a crossroads of crisis. Many believe as this "backbone of America" goes, so goes the nation. Declines in American production of autos, machine tools, construction equipment and steel have been well documented.

"In the end, our overall national standard of living depends on the output of the industrial heartland," said Sen. Donald Riegle (D., Mich), a legislator intimately involved with the fate of America's center. "We cannot allow this region to become a wasteland."

A major national "think tank"—SRI International, formerly the Stanford Research Institute, Menlo Park, Calif.—has taken a close look at the region, reaching several startling conclusions and proposing some dramatic courses of action.

Before zeroing in on America's heartland, several observations are necessary about the state of the nation and the economy generally. It has been observed that in much of the U.S., traditional management practices are not effectively adjusting to fast-changing markets, to new technologies and the current human resources environment.

Employment (Thousands of Workers)

	All Mfg.	Primary Metals	Fab. Metal Products	Machinery Except Electrical	Electric & Electronic Equipment	Transportation Equipment
Illinois						
1979	1,271.6	99.4	146.2	224.9	168.3	58.2
1980	1,208.2	89.8	135.4	225.5	160.8	53.1
1981	1,131.4	81.3	129.3	218.9	150.8	42.6
1982	1,019.5	69.9	111.7	178.9	136.7	38.1
1983	951.1	57.9	105.5	143.6	128.8	35.8
Indiana						
1979	733.2	112.1	63.7	81.7	114.2	102.8
1980	657.0	101.6	55.1	75.3	101.6	82.8
1981	652.6	102.2	53.3	73.9	103.3	81.1
1982	583.3	87.3	47.4	64.4	88.3	70.8
1983	576.6	82.7	48.7	59.1	84.2	72.3
Michigan						
1979	1,160.2	88.0	150.8	167.2	41.9	405.6
1980	998.9	67.3	118.0	158.4	34.9	340.2
1981	979.0	65.0	117.5	154.8	33.0	334.9
1982	874.1	48.8	102.0	131.8	29.7	303.2
1983	880.8	50.5	102.5	116.6	29.9	321.0
Ohio						
1979	1,382.3	158.9	173.5	223.6	117.6	165.8
1980	1,264.3	139.8	175.5	211.4	106.4	139.1
1981	1,232.6	138.3	157.6	204.2	101.9	136.9
1982	1,103.6	113.3	154.9	179.3	93.2	122.0
1983	1,066.9	104.5	130.9	153.1	90.2	131.6
Penna.						
1979	1,386.8	204.1	118.0	142.0	126.4	87.3
1980	1,328.2	190.2	112.8	144.2	122.5	81.5
1981	1,299.0	184.0	108.7	143.6	117.2	77.5
1982	1,167.1	142.0	96.6	127.5	107.8	63.1
1983	1,094.8	122.7	86.8	108.4	101.2	59.7

Also basic consumption patterns in the U.S. are shifting in several ways. First, more sophisticated, segmented markets are becoming the norm. Also there is a shift toward consumption of new types of consumer products currently not made in the Midwest—electronic items, for example.

The general pattern of market change gives increasing advantages to smaller, decentralized, more responsive companies. This is because new, more flexible technologies have made it easier to enter new markets. Also, new firms have no investments in outmoded technologies to write off. Small and decentralized companies are better able to take advantage of the existing atmosphere in America of rapidly changing markets. The latter advantage is abetted by the easy access by small firms to simple computer systems that inexpensively and easily create sophisticated product and consumer information net-

works. Small and decentralized companies appear better able to meet new consumer demands and apply new technologies in today's atmosphere of fast changing markets.

There is no way to stop the trend to accelerating technological and economic change, a trend which is causing industries to restructure and established firms to lose their historic competitive advantages. Declines in the use of steel and other basic materials, relative to the economy will also continue. This trend is an important consequence of the nation's economic maturity and will persist.

Thus it seems the traditional, slow-moving mass production markets to which the midwest was so well adapted are rapidly disappearing. Right now the U.S. economic environment has changed in ways that increasingly threaten to become injurious to the midwestern economy, unless steps are taken.

According to SRI, in many ways the region's current problems can be traced back to its past success. "Management, labor and government became too well adapted to the markets and competitive situation of the 1950s and 1960s. When the economy entered a period of accelerating change in the 1970s, mid-America found it difficult to adjust to the new era. The midwest has been characterized historically by leadership, imagination, cooperation and hard work on the part of all sectors of its economy."

Advantages

Originally mid-American industrial leadership was built on a number of inherent advantages. These included a large domestic market, low energy costs, large pools of investment capital, technological leadership and favorable locale. Gradually those edges have been worn down so that, coupled with the appearance of several new market trends, mid-American industrial leadership is being severely challenged.

Currently many mid-American firms have been so weakened financially they do not have sufficient assets to back their loan needs, according to SRI. Nevertheless, the study group says, lack of venture capital is not the main problem. It asserts mid-America needs more "venturesome investment capital in large amounts for long-term investment. Investors must be able to independently review proposed technologies and proposed markets. Such risky and sophisticated investments require equity capital rather than traditional loans."

In short, meeting midwestern capital needs will require new financial instruments, more flexibility among depositors and more flexible regulations. Each industry has its own individual problems; actions need to be tailored to the needs of each. Thus it is useful to look at each major industry individually.

During the 1970s the machine tools and industrial machinery industries were the most important growth industries in the midwest. But automotive industry mass production worked against computerized numerically controlled (CNC) machine tools. CNC flexibility was considered necessary. However, when automotive engineers began to see the penalties for mass production as the market became more subject to preference swings—where each swing missed meant a loss of market share—the situation changed.

The SRI cites "technology" as the key to the machine tools market "but what matters is the technology that fits the customer's needs. The U.S. developed the key technology of computer-controlled and computer-designed equipment, but the Japanese have applied these technologies more effectively—at least in machine tools."

According to SRI, the combination of fast-moving technology and growing foreign competition has put increasing pressure on many small firms in the machine tool industry. There are more than 1,100 firms and the top four have only 22 pct of the market. New product investments are "bet-the-company" gambles. "All these trends are forcing increasing numbers of mergers and causing more frequent bankruptcies," SRI says.

The market for machinery and machine tools is an excellent example of greater sophistication among consumers and of the difficulties of translating technical leadership into market leadership. Machine tools have become sophisticated and expensive items. Customers are very cautious about buying a $300,000 plus piece of equipment. They make extensive calculations of price-performance ratios and include service and training costs as part of the overall equation.

Foreign Competitors

The general economic recovery should boost all these industries in the next several years, SRI speculates. The market for machine tools and industrial machinery should be relatively strong in the remainder of the 80s, but foreign competition will continue to grow. One of the more difficult transitions facing the midwest is the transition from mass production of consumer goods to specialized production of capital goods.

The midwest can have more jobs in producing the machinery that goes into the production of steel, autos or televisions. But the price for those jobs will be more imports and fewer jobs in the production of those latter three products. The region probably will have more and better-paying jobs if it produces more steel machinery and less steel. But making the switch in the midwest economy to that type of industry will be a difficult one, the SRI says.

In its efforts to revitalize, the steel industry in the midwest must surmount many obstacles. For example, SRI says it sees an industry in a state of over-capacity and at a minimum level of modernization. Also, foreign steel subsidies and the international strength of the U.S. dollar are factors operating against the industry. The high costs of capital and labor must be overcome in order to revive the industry. The SRI criticizes the industry for a "low rate of new technology adoption." but points out if and when that happens there will be a critical need for a skilled labor force to deal with it.

The steel industry, the study observes, has a history of sacrificing long-term goals and benefits for short-term goals and benefits. An after-effect of that has been a tradition of risk aversion and lack of entrepreneurial drive by current management.

Although optimistic for the long-term, the panel initially takes a harsh

view asserting: "The U.S. (steel industry) has rarely been the first to apply new products and processes." It says: "Currently there are numerous existing advanced technologies that, if applied, will have significant impact on the efficiency of steel productions. Wider adoption of these technologies will improve the future international performance of the industry. More efforts of the industry should be placed on technology transfer."

SRI says R&D expenditures by steel firms, as a percentage of sales, have declined over the years. The competitiveness of the midwestern steel industry will be determined largely by how quickly and effectively it can choose and apply new steel production and process control technologies.

Significant Change

The consensus is that a strong steel recovery will require significant changes. There must be less of an adversarial relationship between management and labor and management and government. Retirement of inefficient production facilities is needed along with increased emphasis on producing goods with high added value. Along with that must come increased rate of technology development and acceptance of technologies such as continuous casting and fully computerized rolling mills.

Another apparently unavoidable change will be contractions and consolidations similar to the merger between Republic Steel and LTV Corp. There must be a shift toward more entrepreneural management practices, paying more attention to market needs and international competition similar to the mini-mill approach where plants are built to fit very specific local markets. Mini-mills are predicted to reach 30 pct to 35 pct of the steel market by 1990.

As recovery continues and steel firms become more profitable, capital investment needs will increase. The industry must try novel financing techniques—such as limited partnerships and equipment leasing—in order to fund building new, more efficient facilities and R&D activities. This will, in turn, create a need for capital equipment.

There can be no midwestern recovery without a healthy auto industry, SRI observes. Right now autos are faced with some confusing market trends. For example, foreign competition will continue to intensify. Nevertheless, the industry has become a leader in many areas such as the development of new high-strength steels, new plastics and other new materials. And, the industry has become "high-tech". It is the nation's largest user of robots and computer assisted design systems.

SRI asserts the auto industry is better prepared to meet the challenges of the 1980s than those of the last decade, but times will still be difficult.

The current growth in domestic auto sales was initiated and can be maintained only by continuing emphasis on new technology and introduction of new products better suited to current market demands.

R&D Effort

The U.S. heavy equipment industry has an impressive innovation record. Even with the recent recession the industry kept up a significant effort in innovation. And, SRI says, there continues to be an increasing need for more development and faster implementation and acceptance of electronic sensors and microprocessors. With those better performances, high productivity, higher reliability, better diagnostics and other similar benefits are possible.

In the 1980s the market environment in the midwest will change even faster than it did in the 70s, SRI observes. The markets of the future will require more attention to quality, use of advanced production technologies to improve productivity including more frequent product changes, and use of advanced market information systems. Industries must realize and accept that many traditional market structures have changed, radically and permanently, and that new management attitudes and practices are the key to corporate survival and prosperity.

Fluctuations in interest rates and foreign trade make the midwest more sensitive to economic cycles in the 80s than was the case in the 60s or 70s.

The final analysis is mid-America must, to a larger degree, be the master of its own destiny. SRI points out the major issues on which the midwest must strive to exercise more influence are twofold. First: foreign trade. In that area the principal problem has been the loss of foreign trade. In that area the principal problem has been the loss of competitive position to domestic and foreign producers. Exports are probably one of the great hopes of the midwest economy, but the region might have to surrender low-value-added markets to foreign suppliers.

Nevertheless, the principal issue for the midwest is not foreign competition, but continuing to get into foreign markets. Foreign markets still have enormous growth potential and the long-run market potential is greatest in developing nations. Those countries' growth markets continue to be machinery and industrial equipment, areas where the midwest has and continues to excel.

The trade balance is likely to deteriorate further over the short-term—within the next year—but there are many reasons for long-range optimism, depending largely on Federal economic policies and U.S. managers to compete for these markets.

Secondly, Federal economic policies, that is, monetary and fiscal, will continue to have a major impact on interest rates and the trade value of the dollar. "It is critical," says Sen. Alan J. Dixon (D., Ill.), "that we coordinate our tax, spending and monetary policies."

SRI sets a five-point program for the future. "There is a need for more long-term economic development strategies," the study group says. SRIs plan consists of: (1) more effective utilization of new technologies; (2) more responsive entrepreneurial and technically sophisticated management practices; (3) more strategic application of financial resources; (4) more cooperative labor-management relations; and (5) more investments in human capital.

A step required for future success, asserts SRI, is realizing the entry of new technology and employment of labor skills will require a style of management. This extra effort by management coupled with joint efforts of labor unions, financial institutions and local and Federal governments will help industry take better advantage of future growth in demand. □

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2nd QUARTER EARNINGS
STEEL STALLED; NONFERROUS GAINS SLIGHTLY

BY GEORGE MCMANUS & ROBERT REGAN

After a rebound in the first quarter steel companies were slapped back down again. In the nonferrous sector, aluminum continued to show the way with copper and nickel still waiting for a pickup in the capital goods.

Steel

A cruel fate gave steel companies a small taste of prosperity in the second quarter then shoved the companies back down again.

Prosperity was in the form of profits for most of the mills. The downward shove was supplied by a 10 to 15 pct drop in shipments in the third quarter. The decline will mean profits that are skimpy or nonexistent.

Earnings weren't exactly robust in the second quarter. The combined profit of the five largest mills came to 1.6 pct of sales. Armco, Inc. and LTV Corp. continued to lose money in the quarter.

However, 15 steel producers moved from red ink in the second quarter of 1983 to black ink in the second quarter of 1984.

There were some decisive upward swings. United States Steel Corp. went from a net loss of $112 million in 1983 to a profit of $140 million in 1984...The steel portion of U.S. Steel had an operating profit of $84 million in 1984. That compared with an operating loss of $130 million in the second quarter of 1983.

U.S. Steel faces a depressed order book in the third quarter, said David M. Roderick, chairman. The outlook is "less rosy," said Mr. Roderick, "although we expect to be narrowly profitable in the third quarter."

For Bethlehem Steel Corp., a second quarter net profit of $24 million was the first since 1981. The market slide was noted by Donald H. Trautlein, chairman of Bethlehem.

"As a result, we expect to be at about a break-even level for the third quarter," said Mr. Trautlein.

National Intergroup, Inc., made one of the stronger showings in the second quarter. National's net income of $24.6 million came to 3.1 pct of sales. The net was reduced by a non-recurring charge of $16.9 million. Without this, the sales margin would have been 5.2 pct.

Inland Steel Co. continued its profit recovery in the second quarter. The $24.6 million earned by Inland was up from a loss of $29.7 million in the second quarter of 1983.

"Looking ahead, we view the third quarter with caution," said Frank W. Luerssen, chairman and president of Inland. Mr. Luerssen looked for an early recovery "although prices will continue to be depressed.

Somewhat surprising was Armco's second quarter net loss of $14.1 million. High interest charges and continued losses in the oil country business contributed to the deficit. Armco's carbon steel segment had an operating profit of $44 million for the first six months of 1984.

Armco doesn't expect its oil country business to earn money in the second half. The energy field is one of many where capital spending is still lagging.

LTV had a net loss of $22.7 million in the second quarter. Like Armco, LTV was hit by higher interest charges and by the depressed state of the oil country market.

Not included in LTV's results were the financial returns of what had been Republic Steel. Republic is now part of LTV Steel but second quarter results won't be available for another month.

The profit of employee-owned Weirton Steel Corp. jumped from $9.6 million in the first quarter of 1984 to $22.7 million in the second quarter. Weirton's 7.4 pct return on sales was the highest for any of the big mills.

It appears that Weirton is making good on a game plan that calls for expanded sales of cold rolled sheet. The company shipped 611,000 tons in the second quarter. That was up 6.6 pct from the first quarter.

"We were able to achieve our second quarter sales and shipment objectives in both tin mill products and sheet steel," said Robert L. Loughhead, president of Weirton.

In the specialty steel field, Carpenter Technology Corp. earned a whopping 7.0 pct on second quarter sales. After one brief period of red ink, Carpenter has returned to its customary profitable condition.

"...we expect continued improvement in our shipping levels, selling prices, and mix of products...," said Paul R. Roedel, president of Carpenter.

Temporary Situation

Most steel producers feel they are looking at a temporary market lag. "The softening of demand that has impacted domestic steel producers in recent weeks is apparently related to customer inventory reductions and high import penetration rather than to an economic slowdown," said Mr. Luerssen of Inland.

There is no question the inventory cutting of service centers is a major cause of the slowdown. It isn't entirely clear that the economy is continuing to expand. In June, the government's in-

dex of leading indicators turned down for the first time in 21 months.

Most economists regard the June flip as just that—a minor aberration and not the signal for a recession. Steel producers don't see a prolonged slide but neither do they look for a real boom.

Mr. Roderick predicted that sheet shipments would rise from 76 million tons in 1984 to 82 or 83 million tons in 1985. He didn't look for a dramatic rise in capital markets.

Steel imports continue to worry and vex domestic producers. Nearly 1.8 million tons of foreign steel entered the U.S. in June. A record 12.4 million tons were imported in the first half of this year.

"The gravity of the steel trade crisis should now be clear to even the most casual observer," said Mr. Trautlein. He called for revision of the import curbs recommended by the International Trade Commission (ITC).

"About one-third of the steel products made in the U.S. are not covered by the recommendations," he said.

Mr. Roderick was even more emphatic in his criticism of ITC proposals. "What appears to be a remedy is not a remedy at all," he said. Had the ITC plan been in effect last year, he said, the effect would have been to increase rather than reduce imports.

"What we need is a legislated quota," said Mr. Roderick. Quota legislation is now supported by 219 members of the House of Representatives, he said. "In the Senate, we're up to 27."

Nonferrous

Nonferrous companies continued to trudge their way toward recovery in the second quarter of 1984. The aluminum industry once again had a better time of it than did producers of copper and nickel.

Low copper prices adversely impacted results of Asarco and Phelps Dodge Corp., both of which reported losses in the period, and helped pull Newmont Mining's profits lower by 20 pct.

Asarco would have reported a net profit for the second quarter except an estimated $60 million cost for closing its Tacoma, Wash. copper smelter, but the company also noted that the average copper price was down to 70.5¢ a lb. from the average of 81¢ a lb for the second quarter last year. The price of silver, another important metal for Asarco, was down sharply, but average prices for lead and zinc moved up.

Phelps Dodge said current "unrealistically low" copper prices are well below its per lb production costs and those "of all but a handful of copper mines throughout the world."

Both Asarco and Phelps Dodge sold more copper in the quarter just ended than they did in the second quarter of 1983. Phelps Dodge also noted that copper consumption was strong during the first half of 1984 and estimated that the worldwide copper surplus was reduced by half in the six-month period. The company said the copper price (adjusted for inflation) nonetheless fell to the lowest level in this century amid concerns for rising interest rates, a strong dollar and weak precious metals prices—and "continuing concern over production policies of foreign, state-owned mines."

Asarco said copper's supply/demand fundamentals have been improving since the start of the year and physical stocks have fallen substantially, suggesting that copper prices on the commodity exchanges should eventually respond.

One of the missing ingredients for copper continues to be the capital goods sector. The business recovery to date appears to be mainly a consumer-led recovery with no one following. Passenger car and truck production and sales have been strong since the start of the year, chewing up a lot of metal in the process. But Detroit's gains, fueled by higher car prices and higher unit sales, haven't trickled down to the raw materials suppliers yet.

A sleeping capital goods sector also is limiting the recovery capability of the nickel industry. Inco Ltd.'s operating results for primary metals and alloy products were in the black in the second quarter and first half, its shipments of nickel and copper were higher in the second quarter and first half and average nickel prices were higher as well. The benefits, however, extended only to cutting the second quarter loss to $15.1 million from the $37.1 million lost in the same 1983 period. And the company's nickel stocks rose to 94 million lbs from the 83 million lbs on hand at the start of the year. Inco said the inventory will be reduced as the result of four-week vacation shutdowns which started early in July at the Ontario and Manitoba divisions.

Price recovery was the main contributor to sales and profit gains by North America's four largest aluminum producers. Aggregate shipments by Aluminum Co. of America, Alcan Aluminum Ltd., Reynolds Metals Co. and Kaiser Aluminum & Chemical Corp. were down 4.6 pct to 1.42 million short tons, but aggregate gross revenues were up 17.6 pct to $4.96 billion. All four operated in the black in the period just ended (Reynolds and Kaiser were in the red in the second quarter last year) and aggregate profits equaled $280.6 million compared with a negative $82.8 million in the second quarter last year.

Alcoa said its earnings gain reflected higher prices on many mill products, improved operating efficiencies and higher productivity. The company noted that the U.S. spot price for primary aluminum ended the second quarter 13.3 pct lower at 62¢ a lb and said this reflected a modest rise in inventories worldwide and the continued strength of the U.S. dollar. Alcoa also said prices softened on some common alloy products tied to the ingot price.

Kaiser Aluminum said its aluminum division operated near the breakeven point in the quarter just ended, compared with a $100 million loss in the same 1983 period.

Reynolds Metals said it expects the aluminum business to strengthen in the latter half of 1984 despite a slowing in the new order rate and softening of prices for certain aluminum products. The company said the industry as a whole should show an 11 pct gain in shipments in 1984.

(Cont. on p. 54A8)

STEEL SHOWS SOME UPWARD MOVEMENT

SECOND QUARTER PROFIT REPORT—1984 (In Millions of Dollars)

		EARNINGS			SALES		
	1984 E/S	2nd Quarter 1984	2nd Quarter 1983	Pct Change	2nd Quarter 1984	2nd Quarter 1983	Pct Change
USS	2.9	$140.00	$(112.00)	—	$4,900.00	$4,400.00	+11%
BETHLEHEM	1.6	24.00	(70.70)	—	1,505.10	1,234.60	+22%
ARMCO	—	(14.10)	(75.80)	—	1,196.00	1,079.00	+11%
NATIONAL	3.1	24.64	(99.17)	—	794.86	752.14	+5.7%
INLAND	2.6	24.65	(29.74)	—	938.95	748.12	+26%
LTV*	—	(22.70)	(61.30)	—	1,580.30	993.70	+59%
TOTAL	1.6	176.49	(448.71)	—	10,915.21	9,207.56	+19%
WHEEL-PGH	1.9	5.30	(18.89)	—	279.08	191.57	+46%
INTERLAKE	4.1	10.24	3.58	+186%	248.56	206.01	+21%
CYCLOPS	1.7	3.51	(0.45)	—	317.11	243.20	+30%
CF&I	2.5	2.21	(14.67)	—	89.86	56.93	+58%
COPPERWELD	6.9	8.54	(12.37)	—	124.42	79.98	+56%
CARPENTER	7.9	12.80	9.70	+32%	162.86	112.39	+45%
LUKENS	2.7	3.11	(3.33)	—	113.96	87.27	+31%
PHOENIX	—	(0.74)	(6.96)	—	32.64	30.20	+8.1%
FLORIDA	1.3	0.94	0.76	—	72.09	61.52	+17%
LACLEDE	3.8	2.23	1.41	+58%	59.29	45.56	+30%
NUCOR	5.4	9.2	4.8	+8.9%	169.0	127.6	+32%
EASTMET	1.8	1.26	(2.56)	—	69.03	42.60	+62%
WEIRTON	7.4	22.75	—	—	306.28	—	—
QUANEX	3.3	3.51	(0.25)	—	106.45	74.63	+43%

*Does not include Republic Steel

ALUMINUM STILL CLIMBING; NICKEL AND COPPER STILL WAITING

SECOND QUARTER PROFIT REPORT (Millions of Dollars)

( ) = Denotes Loss

	Earnings			Sales and Other Revenues		
	2nd Q 1984	2nd Q 1983	Pct Chg.	2nd Q 1984	2nd Q 1983	Pct Chg.
ALCAN	$98.0	$3.0	+3,166.7	$1,478.0	$1,329.0	+11.2
ALCOA	112.8	34.6	+226.0	1,452.3	1,257.9	+15.5
AMAX	9.8	(21.2)	—	651.4	567.8	+14.7
ASARCO	(28.6)	27.6	—	357.2	380.3	−6.1
BRUSH WELLMAN	10.7	6.3	+69.8	84.6	60.5	+39.8
CABOT CORP.	26.5	14.1	+87.9	468.3	389.0	+20.4
COMINCO	24.8	(3.7)	—	439.2	413.5	+6.2
ENGLEHARD	18.4	18.0	+2.2	606.0	617.0	−1.8
FREEPORT MCMORAN	25.9	20.9	+23.9	217.8	186.2	+17.0
INCO LTD.	(15.1)	(37.1)	+59.3	385.0	284.0	+35.6
KAISER ALUMINUM	32.5	(51.3)	—	1,017.2	781.9	+28.9
MARTIN MARIETTA	74.1	57.0	+30.0	1,176.0	953.5	+23.3
NEWMONT MINING	12.6	15.8	−20.3	203.4	186.9	+8.8
NORANDA MINES	19.4	9.2	+110.9	986.6	795.1	+24.1
OLIN CORP.	33.0	24.0	+37.5	545.3	490.3	+11.2
OREGON MET	1.0	(0.3)	—	10.4	8.9	+16.9
PHELPS DODGE	(20.7)	0.3	—	255.8	282.1	−9.3
REYNOLDS METALS	37.3	(69.1)	—	1,003.1	853.4	+17.5
VULCAN MATERIALS	25.6	15.4	+66.2	259.2	199.9	+29.7

Alcan Aluminum Ltd.: Net for the '84 period includes an $11 million tax-loss carryforward. **Amax Inc.:** Net for the '84 quarter includes tax credits of $5.6 million and a $20.7 million gain on sale of shares in oil and gas interests. **Asarco Inc.:** Net loss for the '84 period includes a pretax charge of $38 million reflecting estimated $60 million cost of closing the Tacoma, Wash. copper smelter and $22 million credit from changes to estimated costs for previous plant closings. **Cominco Ltd.:** Canadian funds. Net for the '84 period includes $5.2 million extraordinary credit gained mainly on sale of U.S. oil investment. **Martin Marietta Corp.:** Net for the '83 period includes pre-tax gain of $67 million from sale of assets. **Phelps Dodge Corp.:** Net loss for the '84 period includes extraordinary gain of $2.4 million. **Reynolds Metals Co.:** Net for the '84 period includes a $3.2 million net charge for closing Jamaican bauxite mining operations.

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PRICE & PRODUCTION DATA

(Effective August 13, 1984)

Steel production by districts, thousands of tons (000 omitted)

	Last Week	Two Weeks Ago	Month Ago	Year Ago
North East Coast	183	185	215	159
Pittsburgh	222	233	213	204
Youngstown	82	86	82	90
Lake Erie	124	125	122	128
Detroit	161	147	156	141
Chicago	427	437	463	453
Cincinnati	83	87	100	8
St. Louis	71	82	59	74
Southern	175	183	188	139
Western	67	71	78	88
U.S. Production	1,595	1,636	1,676	1,590

Source: American Iron & Steel Institute

Lake Superior Ore Prices

51.50% Fe Natural delivered lower Lake ports. Rail transportation, handling and unloading may be charged to the account of the buyer. Coarse ore 80¢ premium.

Pellets (per iron unit natural).....gross-ton 80.50-86.9*
Mesabi, regular-unscreened .....gross-ton $32.53
Mesabi, non-bessemer..... gross-ton $30.03-31.53**

*80.50¢—Pickands Mather as of 1/27/81.
86.9¢—U. S. Steel as of 3/15/82. Cleveland-Cliffs as of 2/26/82, Oglebay Norton as of 3/25/82, and Hanna Mining as of 2/26/82.
**Effective 8/1/83.

STEEL PRODUCTION, COMPOSITE PRICES

(Effective August 13, 1984)

U.S. Steel Production	Last Week	Two Weeks Ago	To Date 1984	To Date 1983
Net tons, in thousands	1,595	1,636	61,365	49,467
Capability Utilization Rate	61.8	63.4	74.1	53.5

Composite Prices	This Week	Week Ago	Month Ago	Year Ago
Finished Steel Base* (¢/lb.—eff. 7/1/84)	27.582	27.582	27.582	26.217
Pig Iron* * (Net ton=2000 lbs.)	$213.00	$213.00	$213.00	$213.00
Scrap No. 1 hvy.* * * (Gross ton=2240 lbs.)	$ 82.18	$ 81.83	$ 82.17	$ 75.17
No. 2 bundles	$ 50.83	$ 50.83	$ 50.83	$ 45.50

Scrap Comparison (Gross Ton)

No. 1 steel, Pittsburgh..	$ 87.50	$ 86.50	$ 88.50	$ 79.50
No. 1 steel, Philadelphia ..	80.50	80.50	80.50	68.50
No. 1 steel, Chicago.....	78.50	78.50	77.50	77.50
No. 1 bundles, Detroit	70.50	70.50	75.50	71.50
Low Phos., Youngstown ..	80.50	80.50	80.50	79.50
No. 1 mach'y cast., Pgh...	71.50	71.50	75.50	74.50
No. 1 mach'y cast., Phila .	98.50	98.50	98.50	95.50
No. 1 mach'y cast., Chi..	115.50	115.50	115.50	108.50

*Finished Steel Composite: Weighted index of steel bars, shapes, plates, wire, rails, black pipe, hot and cold rolled sheets and strips.
* *Pig Iron Composite: Based on average prices for basic and foundry pig iron at representative producing points within the U.S.
* * *Steel Scrap Composite: Average of No. 1 hvy. melting steel scrap and No. 2 bundles delivered to consumers at Pittsburgh, Philadelphia and Chicago.

NONFERROUS PRICES

(Effective August 13, 1984) Prices obtained in trade based on representative tonnages per gross ton delivered to consumer unless otherwise stated

Primary Metal Prices

(cents per lb.)	current price	last price	date of change
Aluminum (LME)	52.84	52.27	8/13/84
Copper (C)	63.00-64.00	62.00-64.00	8/10/84
Lead	28.00-32.00	28.00-34.00	8/6/84
Magnesium Ingot	148.00	143.00	5/25/84
Nickel (LME)	217.54	214.83	8/13/84
Titanium Sponge	555.00-585.00	555.00	4/29/82
Zinc	48.00	48.00-50.00	8/13/84

ALUMINUM: Avg. for last week & previous week. COPPER (C) = cathode. LEAD: common grade. MAGNESIUM: 99.8% pig, delivered. NICKEL: Avg. for last week & previous week. Canada. ZINC: high grade.

Antimony, American Laredo, Texas	$2.00
Beryllium-aluminum 5% Be, per lb. contained Be	$230.00
Beryllium-copper, per lb. cont. Be	$130.00
Beryllium 97% powder 200	$178.00
Cadmium, ton lots	$1.55
Calcium, ton lots, crown	$3.58
Chromium, 99.8%	$3.75
Cobalt, 99%, cathode	$12.50
Gold per troy oz.	$343.50
Indium, dollars per troy oz.	$3.30
Iridium, dollars per troy oz.	$500
Magnesium sticks, 10,000 lbs.	$1.97
Mercury, per 76-lb. f.o.b. N.Y.	$293-$305
Molybdenum, lb. tech. moly oxides, 20 lb. MO can	$6.85
Nickel electro (PDCR)	$3.29
Palladium, per troy oz.	$136
Platinum, per troy oz.	$337
Rhodium, per troy oz.	$700
Silver ingots, per troy oz.	$7.62
Vanadium	$6.00
Zirconium sponge	$12.00-$17.00

(Per lb. unless otherwise noted)

Straits Tin Price

(U.S. cents per lb, EX-SMELTER, based on daily market in Penang in Malaysian dollars per kilo.)

Aug. 6—567.37
Aug. 7—565.92
Aug. 8—565.92
Aug. 9—566.05
Aug. 10—566.31

Scrap Prices
Brass Mill Scrap

(Cents per lb; over 20,000 lbs. add 1¢ per lb)

	Solids	Turning
Copper	58½	57½
Yellow brass	55	54½
Red brass	55¾	55¼
Comm. bronze	56⅜	55½
Mang. bronze	58	50
Free cutting rod ends	60	59

Custom Smelters Scrap

(Cents per lb., carload lots, del. refinery)

No. 1 copper wire	56
No. 2 copper wire	47
Light copper	38

Ingot Makers Scrap

(Cents per lb., carload lots, del. refinery)

No. 1 copper wire	52
No. 2 copper wire	43
Light copper	34
No. 1 composition	54
No. 1 comp. turnings	52
Hvy. yellow brass solids	36
Hvy. yellow brass turnings	34
Radiators	41

Aluminum

New mixed clips	37	—38
Old sheet	35	—36
Old cast	35	—36
Clean dry borings	36	—37

Dealers' Scrap

(Dealers' buying price f.o.b. New York in cents per pound)

Aluminum

Segregated clippings	35	—36
Mixed L.C. clips	33	—34
Old sheets and cast	28	—29
Borings and turnings	21	—22
Duraluminum clippings	27	—28

Copper and Brass

No. 1 copper wire	46	—47
No. 2 copper wire	38	—39
Light copper	34	—35
Radiators	33	—34
No. 1 composition	42	—43
No. 1 composition turn'gs	39	—40
Cocks and faucets	30	—31
Clean heavy yellow brass	29	—30
Brass Pipe	30	—31
New soft brass clippings	43	—44

Lead

Heavy soft lead	10	—11
Whole batteries	3	— 4
Type metal	16	—17
Electrotype	13	—14

Nickel

Nickel solids	120	—130
Nickel rod ends	120	—130
Nickel sheets, clips	120	—130
Nickel turnings	50	— 60

Zinc

New zinc clippings	18	— 19
Old diecast zinc	14	— 15

EFFECTIVE AUG. 13, 1984

(Effective August 13, 1984) Prices obtained in trade based on representative tonnages per gross ton delivered to consumer unless otherwise stated. Prices are the opinions of *Iron Age* editors and correspondents, based on contacts with dealers, brokers, generators and users in the industry on the effective date listed above.

Ferrous Scrap Prices

Pittsburgh

No. 1 hvy. melting	$ 87.00 to	$ 88.00
No. 2 hvy. melting	77.00 to	78.00
No. 1 dealer bundles	98.00 to	99.00
No. 1 factory bundles (auto)	90.00 to	91.00
No. 2 bundles	53.00 to	54.00
No. 1 busheling	104.00 to	105.00
Machine shop turn	12.00 to	13.00
Shoveling turnings	49.00 to	50.00
Cast iron borings	48.00 to	49.00
Low phos. punchings plate	104.00 to	105.00
Heavy turnings	76.00 to	77.00
No. 1 RR hvy. melting	92.50 to	93.50
Rails 2 ft. and under	113.00 to	114.00
Scrap rails, random lgth.	99.00 to	100.00
RR specialties	105.00 to	106.00
No. 1 machinery cast	71.00 to	72.00
Cupola cast	64.00 to	65.00
Heavy breakable cast	30.00 to	31.00
Stainless		
18-8 bundles and solids	550.00 to	560.00
18-8 turnings	450.00 to	460.00

Chicago

No. 1 hvy. melting	$ 78.00 to	$ 79.00
No. 2 hvy. melting	71.00 to	72.00
No. 1 dealer bundles	93.00 to	94.00
No. 1 factory bundles (auto)	87.00 to	88.00
No. 2 dealer bundles	49.00 to	50.00
No. 1 busheling	92.00 to	93.00
Shredder scrap	90.00 to	91.00
Machine shop turn	42.00 to	43.00
Mixed bor. and turn	43.00 to	44.00
Shoveling turnings	47.00 to	48.00
Cast iron borings	47.00 to	48.00
Low phos. forge crop	111.00 to	112.00
Low phos. punchings plate ¼ in. and heavier	121.00 to	122.00
Low phos. 2 ft. and under	116.00 to	117.00
No. 1 RR hvy. melting	83.00 to	84.00
Scrap rails, random lgth.	89.00 to	90.00
Reroller rails	108.00 to	109.00
Rails, 2 ft. and under	113.00 to	114.00
RR couplers and knuckles	97.00 to	98.00
RR car axles	129.00 to	130.00
No. 1 machinery cast	115.00 to	116.00
Cupola cast	102.00 to	103.00
Stove plate	99.00 to	100.00
Steel car wheels	103.00 to	104.00
Stainless		
18-8 bundles and solids	490.00 to	500.00
18-8 turnings	420.00 to	430.00
430 bundles and solids	120.00 to	125.00
430 turnings	80.00 to	90.00

Philadelphia

No. 1 hvy. melting	$ 79.00 to	$ 82.00
No. 2 hvy. melting	69.00 to	72.00
No. 1 dealer bundles	93.00 to	96.00
No. 2 dealer bundles	48.00 to	51.00
No. 1 busheling	92.00 to	95.00
Shredder scrap	98.00 to	101.00
Machine shop turn	29.00 to	32.00
Mixed bor. and turn	29.00 to	32.00
Shoveling turnings	41.00 to	44.00
Low phos. 5 ft. and under	95.00 to	98.00
Low phos. 2 ft. punchings	115.00 to	118.00
Electric furnace bundles	101.00 to	104.00
RR specialties	100.00 to	103.00
Rails, 2 ft. and under	117.00 to	120.00
Cupola cast	70.00 to	73.00
Heavy breakable cast	57.00 to	60.00
No. 1 machinery cast	97.00 to	100.00

Detroit

Broker buying prices per gross ton on cars:

No. 1 hvy. melting	$ 51.00 to	$ 52.00
No. 2 hvy. melting	50.00 to	51.00
No. 1 dealer bundles	70.00 to	71.00
No. 2 bundles	35.00 to	36.00
No. 1 busheling	69.00 to	70.00
Drop forge flashings	43.00 to	44.00
Machine shop turn	45.00 to	46.00
Mixed borings and turn	23.00 to	24.00
Shoveling turnings	46.00 to	47.00
Cast iron borings	36.00 to	37.00
Heavy breakable cast	38.00 to	39.00
Mixed cupola cast	54.00 to	55.00
Automobile cast	77.00 to	78.00
Stainless		
18-8 bundles and solids	445.00 to	455.00
18-8 turnings	350.00 to	360.00
430 bundles and solids	100.00 to	110.00

Youngstown

No. 1 hvy. melting	$ 66.00 to	$ 69.00
No. 2 hvy. melting	47.00 to	50.00
No. 1 dealer bundles	79.00 to	82.00
No. 2 dealer bundles	35.00 to	38.00
Machine shop turn	13.00 to	16.00
Shoveling turnings	18.00 to	21.00
Low phos. plate	79.00 to	82.00
Electric furnace bundles	76.00 to	79.00
Galvanized bundles	67.00 to	70.00

Cleveland

No. 1 hvy. melting	$ 60.00 to	$ 63.00
No. 2 hvy. melting	37.00 to	40.00
No. 1 dealer bundles	68.00 to	71.00
No. 1 factory bundles	72.00 to	75.00
No. 2 bundles	19.00 to	22.00
No. 1 busheling	73.00 to	76.00
Machine shop turn	8.00 to	11.00
Mixed bor. and turn	8.00 to	11.00
Shoveling turnings	10.00 to	13.00
Cast iron borings	13.00 to	16.00
Cut structural & plates, 2 ft. and under	105.00 to	108.00
Low phos. punchings plate	105.00 to	108.00
Drop forge flashings	42.00 to	45.00
Foundry steel, 2 ft. & under	62.00 to	65.00
No. 1 RR hvy melting	79.00 to	82.00
Rails, 2 ft. and under	105.00 to	108.00
Rails, 18 in. and under	108.00 to	111.00
Steel axle turnings	59.00 to	62.00
Railroad cast	92.00 to	95.00
No. 1 machinery cast	102.00 to	105.00
Cupola cast	58.00 to	61.00
Stove plate	44.00 to	47.00
Stainless		
18-8 bundles	375.00 to	385.00
18-8 turnings	325.00 to	335.00
430 bundles	80.00 to	85.00

Buffalo

Broker buying prices per gross ton on cars:

No. 1 hvy. melting	$ 67.00 to	$ 68.00
No. 2 hvy. melting	56.00 to	57.00
No. 1 busheling	79.00 to	80.00
No. 1 dealer bundles	79.00 to	80.00
No. 2 bundles	37.00 to	38.00
Machine shop turn	14.00 to	15.00
Mixed bor. and turn	13.00 to	14.00
Shoveling turnings	17.00 to	18.00
Cast iron borings	22.00 to	23.00
Low phos. plate	95.00 to	96.00
Structural and plate, 2 ft. and under	96.00 to	97.00
Rails, 2 ft. and under	94.00 to	95.00
Scrap rails, random lgth.	74.00 to	75.00
No. 1 machinery cast	79.00 to	80.00
No. 1 cupola cast	59.00 to	60.00

St. Louis

No. 1 hvy. melting	$ 66.00 to	$ 67.00
No. 2 hvy. melting	55.00 to	56.00
Foundry steel, 2 ft.	66.00 to	67.00
No. 1 dealer bundles	66.00 to	67.00
No. 2 bundles	54.00 to	55.00
Machine shop turn	17.00 to	18.00
Shoveling turnings	23.00 to	24.00
Cast iron borings	27.00 to	28.00
No. 1 RR hvy. melting	68.00 to	69.00
Rails, random length	70.00 to	71.00
Rails, 18 in. and under	89.00 to	90.00
RR specialties	85.00 to	86.00
Cupola cast	72.00 to	73.00
Heavy breakable cast	50.00 to	51.00
Stove plate	83.00 to	84.00
Steel car wheels	97.00 to	98.00
Rerolling rails	80.00 to	81.00
Unstripped motor blocks	56.00 to	57.00

Birmingham

No. 1 heavy melting	$ 73.00 to	$ 74.00
No. 2 heavy melting	65.00 to	67.00
No. 1 dealer bundles	73.00 to	74.00
No. 2 bundles	52.00 to	53.00
No. 1 busheling	73.00 to	74.00
Shredder scrap	93.00 to	94.00
Machine shop. turn	26.00 to	27.00
Shoveling turnings	40.00 to	41.00
Cast iron borings	40.00 to	41.00
Electric furnace bundles	64.00 to	65.00
Elec. furnace, 3 ft. & under	71.00 to	72.00
Structural and plate, 2 ft.	97.00 to	98.00
Structural and plate, 4 ft.	87.00 to	88.00
No. 1 RR hvy. melting	87.00 to	88.00
Scrap rails, random lgth.	82.00 to	83.00
Rails, 2 ft. and under	102.00 to	103.00
Angles and splice bars	87.00 to	88.00
No. 1 cupola cast	84.00 to	85.00
Unstripped motor blocks	67.00 to	68.00

Cincinnati

Brokers buying prices per gross ton on cars:

No. 1 hvy. melting	$ 59.00 to	$ 60.00
No. 2 hvy. melting	55.00 to	56.00
No. 1 dealer bundles	71.00 to	72.00
No. 2 bundles	33.00 to	34.00
Machine shop turn	5.00 to	6.00
Shoveling turnings	7.00 to	8.00
Cast iron borings	20.00 to	21.00
Low phos. 18 in. and under	88.00 to	89.00
Rails, random length	71.00 to	72.00
Rails, 2 ft. and under	87.00 to	88.00
No. 1 cupola cast	60.00 to	61.00
Heavy breakable cast	27.00 to	28.00
Drop broken cast	81.00 to	82.00

New York

Brokers buying prices per gross ton on cars:

No. 1 hvy. melting	$ 50.00 to	$ 52.00
No. 2 hvy. melting	41.00 to	43.00
No. 2 dealer bundles	23.00 to	27.00
Mixed bor. and turn	11.00 to	13.00
Machine shop turn	6.00 to	7.00
Shoveling turnings	14.00 to	15.00
Clean cast. chem. borings	35.00 to	36.00
No. 1 machinery cast	89.00 to	90.00
Mixed yard cast	50.00 to	51.00
Heavy breakable cast	10.00 to	12.00
Stainless		
18-8 prepared solids	490.00 to	510.00
18-8 turnings	390.00 to	410.00
430 prepared solids	90.00 to	110.00
410 solids	80.00 to	90.00

Boston

Brokers buying prices per gross ton on cars:

No. 1 hvy. melting	$ 65.00 to	$ 66.00
No. 2 hvy. melting	55.00 to	56.00
No. 1 dealer bundles	70.00 to	71.00
No. 2 bundles	39.00 to	41.00
No. 1 busheling	75.00 to	76.00
Shredder scrap	75.00 to	77.00
Machine shop turn	14.00 to	16.00
Shoveling turnings	22.00 to	24.00
No. 1 machinery cast	85.00 to	90.00
Mixed cupola cast	48.00 to	50.00
Heavy breakable cast	14.00 to	15.00

San Francisco

No. 1 hvy. melting	$ 45.00 to	$ 47.00
No. 2 hvy. melting	39.00 to	41.00
No. 1 dealer bundles	35.00 to	37.00
No. 2 dealer bundles	17.00 to	18.00
Machine shop turn	6.00 to	8.00
Cast iron borings	6.00 to	8.00
No. 1 cupola cast	81.00 to	83.00

Los Angeles

No. 1 hvy. melting	$ 46.00 to	$ 48.00
No. 2 hvy. melting	39.00 to	41.00
No. 1 dealer bundles	36.00 to	38.00
No. 2 dealer bundles	17.00 to	19.00
Machine shop turn	10.00 to	12.00
Shoveling turnings	8.00 to	10.00
Cast iron borings	6.00 to	8.00
Elec. furnace, 1 ft. and under (foundry)	77.00 to	79.00
No. 1 cupola cast	75.00 to	77.00

Seattle

No. 1 hvy. melting	$ 70.00 to	$ 72.00
No. 2 hvy. melting	59.00 to	61.00
No. 2 bundles	41.00 to	43.00
No. 1 cupola cast	94.00 to	95.00
Mixed yard cast	84.00 to	86.00

Hamilton, Ont.

Brokers buying price per net ton on cars:

No. 1 heavy melting	$ 90.00
No. 2 heavy melting cut 2 ft. and under	84.00
No. 1 dealer bundles	92.00
No. 2 bundles	48.00
Mixed steel scrap	62.00
Bush. new fact. prep'd.	92.00
Bush. new fact. unprp'd.	82.00
Machine shop turn	41.00
Short steel turn	43.00
Mixed bor. and turn	30.00
Cast scrap	73.00

Houston

Brokers buying prices per gross ton on cars:

No. 1 hvy. melting	$ 73.00 to	$ 74.00
No. 2 hvy. melting	59.00 to	60.00
No. 2 bundles	42.00 to	43.00
Machine shop turn	16.00 to	17.00
Crushed turnings	34.00 to	35.00
Shredder scrap	78.00 to	79.00
Cut structural plate, 2 ft. and under	100.00 to	102.00
Cut structural plate, 5 ft. and under	87.00 to	89.00
Unstripped motor blocks	60.00 to	61.00
Cupola cast	75.00 to	76.00

PRODUCER KEY
With Principal Offices

A4 American Cladmetals Co., Carnegie, Pa.
A7 Armco Inc., Middletown, Ohio
A8 Atlantic Steel Co., Atlanta, Ga.
A11 Atlantic Wire Co., Branford, Conn.

B1 Baron Drawn Steel Corp., Toledo, Ohio
B3 Bethlehem Steel Corp., Bethlehem, Pa.
B4 Blair Strip Steel Co., New Castle, Pa.
B5 Bliss & Laughlin Steel Co., Harvey, Ill.

C1 Calstrip Corp., Los Angeles
C6 CF&I Steel Corp., Pueblo, Colo.
C10 Copperweld Steel Co., Warren, Ohio
C11 Crucible Divisions, Colt Industries, Pittsburgh, Pa.
C15 G. O. Carlson, Inc., Thorndale, Pa.
C16 Connors Steel Co., Birmingham, Ala.
C20 Calumet Steel Div., Chicago Heights, Ill.
C21 Cumberland Steel Co., Cumberland, Md.

D1 Detroit Strip Div., Cyclops Corp.
D2 Driver Wilbur B., Co., Newark, N. J.
D3 Driver Harris Co., Harrison, N. J.

E3 Enamel Products & Plating Co., McKeesport, Pa.
E4 Elliot Bros. Steel Co., New Castle, Pa.

F1 Firth Sterling, Inc., McKeesport, Pa

G2 Granite City Steel Co., Granite City, Ill.
G3 Great Lakes Steel Division, National Steel Corp., Ecorse, Mich.
G4 Greer Steel Co., Dover, O.
G5 Green River Steel Corp., Owensboro, Ky.
G6 Gibraltar Steel Corp., Buffalo, N. Y.
G7 Georgetown Steel Corp., Georgetown, S. C.
G8 Guterl Special Steel Corp.

H1 Hercules Drawn Steel Corp., Livonia, Mich.

I2 Ingersoll Steel Div., New Castle, Ind.
I3 Inland Steel Co., Chicago, Ill.
I4 Interlake Steel Corp., Chicago

J2 Jessop Steel Corp., Washington, Pa.
J3 Jones & Laughlin Steel Corp., Pittsburgh
J4 Joslyn Mfg. & Supply Co., Chicago
J5 Judson Steel Corp., Emeryville, Calif.

K2 Keystone Consolidated Industries, Inc.
K3 Kentucky Electric Steel Co., Ashland, Kentucky
K5 Kemco Div., Foote Mineral Co., Keokuk, Iowa

L2 La Salle Steel Co., Chicago
L3 Lone Star Steel Co., Dallas
L4 Lukens Steel Co., Coatesville, Pa.
L5 Litho-Strip Corp., Chicago

M2 McLouth Steel Products Corp.
M4 Mid States Steel & Wire Co., Crawfordsville, Ind.
M8 Mill Strip Products Div., National Steel Service Center, National Steel Corp.
M9 Moltrup Steel Products Co., Beaver Falls, Pa.
M11 Midwest Steel Div., National Steel Corp., Portage, Ind.

N1 Northeast Precision Steel Co., Boston, Mass.
N4 Northwestern Steel & Wire Co., Sterling, Ill.
N6 Northwest Steel Rolling Mills, Seattle, Wash.
N9 Nelsen Steel & Wire Co., Chicago, Ill.
N10 North Star Steel Co., Saint Paul, Minnesota

O2 Oregon Steel Mills, Portland, Ore.

P2 Phoenix Steel Corp., Claymont, Del.
P9 Pacific States Steel Co., Niles, Cal
P14 Pacific Tube Co., Los Angeles
P15 Philadelphia Steel and Wire Corp., Phila.

R3 Republic Steel Corp., Cleveland
R4 Ramco Steel Co., Buffalo, N. Y.
R5 Roblin Steel Corp., Inc., North Tonawanda, N. Y.
R6 Rodney Metals, Inc., New Bedford, Mass.
R7 Rome Strip Steel Co., Rome, N. Y.

S1 Sharon Steel Corp., Sharon, Pa.
S7 Stanley Works, New Britain, Conn.
S8 Superior Drawn Steel Co., Monaca, Pa.
S10 Seneca Steel Service, Buffalo, N. Y.
S16 Southern Precision Steel Co., Gulfport, Miss.

T4 Thomas Steel Strip Co., Warren, O.
T5 Timken Company, Steel Division, Canton, O.
T7 Texas Steel Co., Fort Worth, Tex.
T9 Triumph Electro Corp., Chicago, Ill.
T10 Tennessee Forging Steel Corp., Harriman, Tenn.
T11 Teledyne Columbia-Summerill, Carnegie, Pa.

U1 United States Steel Corp., Pittsburgh, Pa.

W3 Weirton Steel Corp., Weirton, West Va.
W5 Wheeling-Pittsburgh Steel Corp.
W7 Wilson Steel & Wire Co., Chicago
W10 Wyckoff Steel Div., Ampco-Pittsburgh Corp., Pittsburgh, Pa.
W14 Whittaker Steel Strip Div., Detroit, Mich.

STEEL SERVICE CENTER PRICES

Price, Dollars per 100 lb

Prices are based on list prices reported to *Iron Age* by a number of metal service centers deemed representative by *Iron Age* and then weighted based in part on the reports received each month. Prices are not intended to reflect the actual transaction prices obtained by any individual metal service center.

Cities*	Sheets			Strip	Plates	Shapes	Bars		Alloy Bars			
City Delivery Charge*	Hot-Rolled (10 gage)	Cold-Rolled (20 gage)	Galvanized (16 gage)	Hot-Rolled Strip	Plates	Standard Structurals	Hot-Rolled (merchant)	Cold Finished	Hot-Rolled 8620 As Rolled	Hot-Rolled 4140 Annealed	Cold-Drawn 8620 As Rolled	Cold-Drawn 4140 Annealed
Atlanta	27.00	33.90	33.70	31.00	25.06	22.67	19.55	31.80	34.34	50.60	69.58	73.19
Baltimore	26.90	30.72	37.59	39.82	34.75	28.80	22.60	38.65	57.45	64.70	71.71	75.11
Birmingham	25.28	32.43	32.34	30.92	24.87	23.01	19.99	30.45	49.31	58.90	68.10	74.43
Boston	34.94	40.19	45.64	47.54	35.34	30.06	23.59	39.92	47.92	52.53	61.17	66.10
Buffalo	31.10	35.68	41.89	40.15	32.59	27.12	19.86	36.11	42.73	47.85	54.88	61.76
Chicago	29.10	34.49	37.97	33.01	25.87	22.32	17.70	33.04	37.62	42.94	48.10	53.18
Cincinnati	28.32	34.18	36.74	32.41	24.04	23.97	17.90	32.96	37.16	42.22	46.73	52.44
Cleveland	28.48	34.22	37.48	36.74	26.92	26.13	18.81	36.34	39.72	44.35	48.47	55.33
Denver	33.62	38.88	40.88	36.36	34.45	28.66	21.62	44.31	52.10	60.06	67.39	75.21
Detroit	28.82	37.33	37.86	33.26	26.63	26.17	16.45	33.05	37.18	42.22	46.81	54.09
Houston	33.49	33.47	38.79	43.62	30.10	28.46	24.22	42.05	47.76	55.05	61.50	68.69
Kansas City	31.68	36.89	40.00	36.07	28.03	30.31	20.13	35.00	42.70	47.64	53.21	60.30
Los Angeles	28.68	34.90	38.63	42.22	34.75	36.18	27.29	43.06	54.80	60.63	65.43	72.14
Memphis	25.34	33.05	34.52	33.57	27.06	28.48	22.33	34.94	36.78	49.96	59.80	69.44
Milwaukee	29.35	34.89	37.85	33.48	25.03	23.90	17.58	32.83	37.54	42.78	46.73	53.60
New York	32.47	38.99	42.55	43.38	33.96	27.21	21.06	40.81	44.67	49.61	61.12	67.29
Philadelphia	30.41	38.99	41.23	43.50	31.05	28.11	20.85	38.37	45.27	51.38	61.22	67.64
Pittsburgh	35.27	40.97	45.23	43.45	37.60	30.44	21.29	29.80	41.40	47.58	53.03	60.02
Portland	28.96	32.08	38.73	36.93	32.88	34.78	27.87	44.85	49.78	57.74	70.44	....
San Francisco	29.08	34.33	39.15	42.73	35.98	35.38	26.70	44.22	52.75	60.38	67.30	73.42
Seattle	24.08	32.19	36.23	34.23	24.23	27.32	26.63	40.03	53.07	63.70	71.05	75.81
Spokane	21.21	30.42	35.65	38.02	35.00	33.77	21.97	43.01	43.20	47.52	....	58.32
St. Louis	29.11	34.60	37.31	34.59	26.19	22.90	18.40	33.87	38.12	43.51	48.85	53.69
St. Paul	28.87	33.61	36.69	38.36	26.91	23.73	17.70	33.96	37.52	42.72	47.09	53.31

Base Quantities. All HR products may be combined for quantity. Hot-rolled sheet, 10 ga x 36 x 96—120; Cold-rolled sheet, 20 ga x 36 x 120; Galv. sheet—16 ga x 36—120; Hot-rolled strip—⅛" x 1"; Plate ¼" x 84/; Shapes—I-Beams 6 x 12.5; Hot-rolled bar—Rounds ¾-2 15/16; Cold finished bar—C 1018—1" rounds; Alloy bar—Hot-rolled 8620—1⅛" round; Cold drawn—1" round; Hot-rolled 4140—1⅛" round; Cold drawn—1" round. Check local supplier for additions or deductions from base.

*Prices at all points include metropolitan delivery charges.

Codes identify Producers listed in the Key on page 72. (Prices quoted are mill base prices in cents per pound unless otherwise noted and do not reflect extras or surcharges.) N.A.=Not available.

Billets, Blooms, Slabs

(Dollars per net ton)

Carbon Rerolling, Midwest	
W5	$366.00
N4	$366.00
West	
C6	$346.00
Carbon Forging, East	
B3(2), C10, U1	$473.00
R3	$453.00
Midwest	
R3, W5	$453.00
S1, U1, I3	$473.00
C10	$473.00
K2	$453.00
West	
B3(2)	$463.00
C6	$453.00
Alloy, East	
R3	$492.00
B3, U1, C10	$512.00
Midwest	
W5	$492.00
U1, C10, I3	$512.00
R3	$492.00
S1	$512.00
West	
B3	$502.00
C6	$469.00

Piling Sheet Steel

(cents per lb)

Midwest	
U1	26.45

Structurals

Carbon, East	
B3	22.90
U1, J3	23.90
Midwest	
C20	22.90
W8	22.90
I3, T10, U1, N4	23.90
West	
C6	25.10
B3(2)	21.65
South	
C16, U1	23.90
T10	22.90
A8	Cmp*
High-Strength, Low Alloy, East	
B3	22.90
U1, J3	23.90
Midwest	
N4	23.90
W8	24.15
U1	23.90
I3	23.90
West	
B3	21.65
South	
U1, C16	23.90
Wide Flange, Carbon, East	
B3	22.90
U1, J3	23.90
Midwest	
U1	23.90
N4	23.90
I3	23.90
West	
C6	24.15

Strip

Hot-Rolled, Carbon, Cut ll Edge—all widths, East	
U1, B3	23.75
J3	22.05
Midwest	
D1	22.05
I4	22.85
J3, D1, W3	22.05
G2, G3	23.45
N4	22.55
W5, S1, A7	23.75
U1, B3, I3	23.75
M2, R3	22.05
West	
B3	26.55
South	
R3	22.05
Cold-Rolled, Carbon Max. 25%, East	
E4	29.75
S10	29.60
P15	24.80
B4	36.60
G6	36.175
Midwest	
I4	38.30
W14	32.80
J4	34.05
S1	37.05
High-Strength, Hot-Rolled, Low Alloy, Cut Edge & Mill Edge—all widths, (plus extras)*	
Midwest	
M2, R3, W3, J3, I3	22.05
G2, G3	23.45
S1	23.75
A7	25.35
South	
R3	22.05
High-Strength, Cold-Rolled, Low Alloy, Mill Edge	
Midwest	
S1	37.05
Alloy, Hot-Rolled, Midwest (plus extras)*	
S1	26.10
I4	25.20
Alloy, Cold-Rolled, East	
C11, E4, M8	43.35
B4	47.25
P15	32.10
Midwest	
I4	44.30
S1	44.80

Sheets

Hot-Rolled, Carbon (18 Ga & Hvyr), East	
B3	23.75
J3	22.05
U1	23.75
Midwest	
M2, R3, W3	22.05
D1, J3	22.05
G2, G3	23.45
I4	22.45
U1, W5, S1, B3, I3, A7	23.75
West	
U1	24.25
South	
R3	22.05
Cold-Rolled, East, Class I	
B3(2)	28.15
J3	28.15
U1	28.15
Midwest	
R3, M2, W3	26.15
G2, G3, M11	27.85
I4	22.00
J3	26.15
D1	26.15
U1, W5, S1, B3, I3, A7	28.15
West	
U1	23.65
South	
R3	24.65
Galvanized (hot-dipped), East	
B3(2)	30.30
U1	30.30
Midwest	
J3, D1, W3	28.00
R3, Y1	28.00
G2, M11	30.00
U1, W5, S1, I3, A7	30.30
West	
U1	30.80
South	
R3	28.00
Enameling, Midwest	
U1, S1, I3, A7	29.65
J3	27.65
Long-Terne, Midwest	
W5, A7	31.65
U1	31.65
R3	29.35

Wire Rod

East	
B3(2)	22.35
Midwest	
N4, K2	22.35
I11	24.10
A7	22.00
West	
C6	21.45
South	
G7	22.35

Tinplate

Electrolytic Tinplate

	per base box
Single Reduced (70 lb)	
East	
J3	$26.29
U1	27.74
B3	27.54
Midwest	
U1	$27.74
J3	26.29
M11	27.24
W3	26.29
W5	27.74
West	
U1	$28.24
South	
U1	$27.74
Double Reduced (55 lb)**	
Midwest	
M11	$21.87
J3	21.49
U1	22.37
W3	21.49
W5	22.37
West	
U1	$22.87
South	
U1	$22.37
Black Plate	
Single Reduced (75 lb)*	
East	
B3	$24.31
Midwest	
J3, W5	$24.01
I3, W5	24.57
W3	24.01
U1, M11	25.26
West	
U1	$25.26
Double Reduced (55 lb)	
East	
B3	$20.49
Midwest	
M11	$19.70
W5	19.70
J3	18.93
W3	18.93
W5	18.93
U1	19.70
West	
U1	$19.70
South	
U1	$19.70

*70 lb—base weight extra 45¢
**50 lb—base weight extra $1.40

Bars

Carbon Steel, Hot-Rolled (Special quality)

East	
R3, K3	25.80
R5	25.80
J3	25.80
U1, C10, B3(3)	27.05
Midwest	
I4	23.95
U1, I3	27.05
R3, T10, C20, N4	25.80
K2	25.80
I5	22.00*
A7	20.25
West	
B3	25.80
C6	24.45
South	
A8	20.65
C16	25.80
Cold-Finished Carbon, East	
A11	22.15
R3	33.75
C21	21.15
J3(4), L2	31.00
M8, W10, T11, S8	31.00
N1	24.475
R4	33.25
B4	33.25
C10	31.00
Midwest	
W10, R3, M9	33.25
J3	31.00
B1	33.45
L2	30.75
N9	31.00
W14	22.20
B5	34.75
West	
R3	37.15
South	
J3	34.00
C16	24.40
J3	31.95
Alloy, Hot-Rolled, East	
R5, K3	27.95
R3, J3	27.95
U1, B3(2), C10	29.20
Midwest	
R3	27.95
I3, C10, U1	29.20
I4	26.10
I3	23.50*
A7	20.25
West	
B3	27.95
C6	26.60
South	
A8	22.00
Alloy, Cold Drawn, East	
L2	35.20
R3, N1	37.90
R4	37.10
A11	30.50
J3, W10, L2	34.85
T11, S8	34.85
C10	34.85
Midwest	
R3	37.35
J3, W10, C10	34.85
B1	37.30
N9	34.85
L2	34.65
B5	38.60
M9	37.10
West	
R3	40.75
South	
J3	35.85
C16	28.00

Plates

Carbon Steel, East	
B3	23.25
L4, U1	25.75
P2	25.75
J3	26.75
Midwest	
B3	23.25
I3	25.75
J3, A7	22.80
U1, I4, S1	25.75
R3	26.75
West	
C6	24.25
U1, B3	25.75
O2	23.00
South	
R3	25.75
U1	25.75
Alloy, East	
B3	31.05
U1, L4	33.55
P2	33.55
J3	34.55
Midwest	
B3	31.05
G2, G3	33.55
I4, U1	33.55
West	
B3	33.55
O2	31.00
South	
U1	33.55

Wire

Carbon Steel Wire, East	
B3	27.10
A11	22.15
Midwest	
R3	24.60
N4, W7	27.40
K2	24.20
South	
A8	22.85
West	
C6	24.95

PRICES POST MODERATE GAIN

Inflation may be back, but it is a much tamer creature. Producer prices, following three months of stability, finally crept up in July, but only by 0.3 pct, the U.S. Labor Department's Bureau of Labor Statistics said.

If this rate continued for the rest of the year, the result after compounding would be only a modest 3.3 pct. This would mean a minor inflation rate for the year, even below the 5-6 pct range frequently forecast for 1984.

Most of the small increase was fueled by a 1.4 pct increase in consumer food prices, offset in part by decreases in energy prices.

Capital equipment prices, however, also rose slightly during July—by 0.2 pct. These items represent 22.2 pct of the total producer price index.

The rise was spread through the capital equipment field, ranging from a modest 0.1 pct gain for such diverse items as automobiles, and pumps and compressors to sharp increases of 1.6 pct for ball and roller bearings and 1.4 pct for heating equipment.

Slight decreases from June—0.1 pct—were registered in valves and fittings and miscellaneous metal products.

According to several analysts, the continued strength of the dollar plays a key role in the low inflation rate, forcing U.S. producers to keep prices low to compete with inexpensive imported products.

The producer price index for finished goods rose 0.3 pct in July from June, after seasonal adjustment. However, prices of intermediate goods—those requiring further processing—fell by 0.2 pct, indicating that further price increases in the next few months will continue to be moderate, further fueling a steady economic growth without high inflation.

Some analysts see slightly higher increases in producer prices after Labor Day, but most are still predicting that the overall inflation rate will be under 4 pct for the year.

Latest Month Covered: July 1984

Products	Index Reading For Month (1967 = 100)	Pct Change From Previous Month	Pct Change From Year-Ago Month
Metal Cutting Machine Tools	384.1	+ 0.2	+ 2.0
Metal Forming Machine Tools	425.2	+ 0.3	+ 2.2
Agricultural Machinery & Equip.	337.2	+ 0.1	+ 3.1
Construction Machinery & Equip.	358.2	0	+ 1.5
Industrial Process Furnace & Ovens	374.4	0	+ 3.3
Industrial Material Handling Equip.	289.0	+ 0.1	+ 1.5
Pumps, Compressors & Allied Equip.	349.9	+ 0.1	+ 0.6
Fluid Power Equip. (Dec. 1970 = 100)	260.3	+ 0.6	+ 2.7
Mechanical Power Transmission Equip.	326.4	+ 0.8	+ 3.6
Automobiles	221.1	+ 0.1	+ 1.7
Motor Trucks—Light	282.4	0	+ 4.6
Motor Trucks—Heavy	334.7	0	+ 6.8
Railroad Equipment	363.4	+ 0.6	+ 3.4
Fabricated Metal Structural Products	311.6	+ 0.2	+ 3.1
Electric Motors	340.3	0	+ 1.6
Valves & Fittings (Dec. 1982 = 100)	101.9	− 0.1	+ 2.0
Ball & Roller Bearings	343.3	+ 1.6	+ 3.6
Cutting Tools & Accessories	278.6	+ 0.3	+ 1.1
Heating Equipment	254.7	+ 1.4	+ 4.0
Plumbing Fixtures & Brass Fittings	302.5	+ 0.2	+ 4.2
Metal Containers	348.4	+ 0.1	+ 3.5
Miscellaneous Metal Products	294.1	− 0.1	+ 3.7

Data based on U.S. Labor Dept.'s Producer Price Index

NOTE

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